



## SEQUENCE LISTING

&lt;110&gt; BOEHRINGER INGELHEIM (CANADA) LTD.

<120> SELF REPLICATING RNA MOLECULE FROM  
HEPATITIS C VIRUS

&lt;130&gt; 13/083-2-C1

&lt;140&gt; 10/686,835

&lt;141&gt; 2003-10-16

&lt;150&gt; 10/029,907

&lt;151&gt; 2001-12-21

&lt;150&gt; 60/257,857

&lt;151&gt; 2000-12-22

&lt;160&gt; 28

&lt;170&gt; FastSEQ for Windows Version 4.0

&lt;210&gt; 1

&lt;211&gt; 8639

&lt;212&gt; DNA

&lt;213&gt; HCV

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1803)...(8408)

&lt;400&gt; 1

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Gln Val Trp Ile Pro Pro Leu Asn Val Arg Gly Gly Arg Asp Ala Val				
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Ile Leu Leu Thr Cys Ala Ile His Pro Glu Leu Ile Phe Thr Ile Thr				
65	70	75	80	
aaa atc ttg ctc gcc ata ctc ggt cca ctc atg gtg ctc cag gct ggt	2089			
Lys Ile Leu Leu Ala Ile Leu Gly Pro Leu Met Val Leu Gln Ala Gly				
85	90	95		
ata acc aaa gtg ccg tac ttc gtg cgc gca cac ggg ctc att cgt gca	2137			
Ile Thr Lys Val Pro Tyr Phe Val Arg Ala His Gly Leu Ile Arg Ala				
100	105	110		
tgc atg ctg gtg cgg aag gtt gct ggg ggt cat tat gtc caa atg gct	2185			
Cys Met Leu Val Arg Lys Val Ala Gly Gly His Tyr Val Gln Met Ala				
115	120	125		
ctc atg aag ttg gcc gca ctg aca ggt acg tac gtt tat gac cat ctc	2233			
Leu Met Lys Leu Ala Ala Leu Thr Gly Thr Tyr Val Tyr Asp His Leu				
130	135	140		

acc Thr 145	cca Pro	ctg Leu	cgg Arg	gac Asp	tgg Trp 150	gcc Ala	cac His	gcg Ala	ggc Gly 155	cta Leu 155	cga Arg	gac Asp	ctt Leu	gcg Ala	gtg Val 160	2281
gca Ala	gtt Val	gag Glu	ccc Pro	gtc Val 165	gtc Val	ttc Phe	tct Ser	gat Asp	atg Met 170	gag Glu	acc Thr	aag Lys	gtt Val	atc Ile 175	acc Thr	2329
tgg Trp	ggg Gly	gca Ala	gac Asp 180	acc Thr	gcg Ala	gcg Ala	tgt Cys	ggg Gly 185	gac Asp	atc Ile	atc Ile	ttg Leu	ggc Gly 190	ctg Leu	ccc Pro	2377
gtc Val	tcc Ser	gcc Ala 195	cgc Arg	agg Arg	ggg Gly	agg Arg	gag Glu 200	ata Ile	cat His	ctg Leu	gga Gly 205	ccg Pro 205	gca Ala	gac Asp	agc Ser	2425
ctt Leu	gaa Glu 210	ggg Gly	cag Gln	ggg Gly	tgg Trp	cga Arg 215	ctc Leu	ctc Leu	gcg Ala	cct Pro	att Ile 220	acg Thr	gcc Ala	tac Tyr	tcc Ser	2473
caa Gln 225	cag Gln	acg Thr	cga Arg	ggc Gly	cta Leu 230	ctt Leu	ggc Gly	tgc Cys	atc Ile	atc Ile 235	act Thr	agc Ser	ctc Leu	aca Thr	ggc Gly 240	2521
cgg Arg	gac Asp	agg Arg	aac Asn	cag Gln 245	gtc Val	gag Glu	ggg Gly	gag Glu	gtc Val 250	caa Gln	gtg Val	gtc Val	tcc Ser	acc Thr 255	gca Ala	2569
aca Thr	caa Gln	tct Ser	ttc Phe 260	ctg Leu	gcg Ala	acc Thr	tgc Cys	gtc Val 265	aat Asn	ggc Gly	gtg Val	tgt Cys	tgg Trp 270	act Thr	gtc Val	2617
tat Tyr	cat His	ggt Gly 275	gcc Ala	ggc Gly	tca Ser	aag Lys	acc Thr 280	ctt Leu	gcc Ala	ggc Gly	cca Pro	aag Lys 285	ggc Gly	cca Pro	atc Ile	2665
acc Thr 290	caa Gln	atg Met	tac Tyr	acc Thr	aat Asn 295	gtg Val 295	gac Asp	cag Gln	gac Asp	ctc Leu	gtc Val 300	ggc Gly	tgg Trp	caa Gln	gcg Ala	2713
ccc Pro 305	ccc Pro	ggg Gly	gcg Ala	cgt Arg	tcc Ser 310	ttg Leu	aca Thr	cca Pro	tgc Cys	acc Thr 315	tgc Cys	ggc Gly	agc Ser	tcg Ser	gac Asp 320	2761
ctt Leu	tac Tyr	ttg Leu	gtc Val	acg Thr 325	agg Arg	cat His	gcc Ala	gat Asp	gtc Val 330	att Ile	ccg Pro	gtg Val	cgc Arg	cgg Arg 335	cgg Arg	2809
ggc Gly	gac Asp	agc Ser	agg Arg 340	ggg Gly	agc Ser	cta Leu	ctc Leu	tcc Ser 345	ccc Pro	agg Arg	ccc Pro	gtc Val	tcc Ser 350	tac Tyr	ttg Leu	2857
aag Lys	ggc Gly	tct Ser 355	tcg Ser	ggc Gly	ggt Gly	cca Pro	ctg Leu 360	ctc Leu	tgc Cys	ccc Pro	tcg Ser	ggg Gly 365	cac His	gct Ala	gtg Val	2905
ggc Gly	atc Ile 370	ttt Phe	cgg Arg	gct Ala	gcc Ala	gtg Val 375	tgc Cys	acc Thr	cga Arg	ggg Gly	gtt Val 380	gcg Ala	aag Lys	gcg Ala	gtg Val	2953
gac Asp 385	ttt Phe	gta Val	ccc Pro	gtc Val	gag Glu 390	tct Ser	atg Met	gaa Glu	acc Thr	act Thr 395	atg Met	cgg Arg	tcc Ser	ccg Pro	gtc Val 400	3001

ttc	acg	gac	aac	tcg	tcc	cct	ccg	gcc	gta	ccg	cag	aca	ttc	cag	gtg	3049
Phe	Thr	Asp	Asn	Ser	Ser	Pro	Pro	Ala	Val	Pro	Gln	Thr	Phe	Gln	Val	
				405					410					415		
gcc	cat	cta	cac	gcc	cct	act	ggg	agc	ggc	aag	agc	act	aag	gtg	ccg	3097
Ala	His	Leu	His	Ala	Pro	Thr	Gly	Ser	Gly	Lys	Ser	Thr	Lys	Val	Pro	
				420				425					430			
gct	gcg	tat	gca	gcc	caa	ggg	tat	aag	gtg	ctt	gtc	ctg	aac	ccg	tcc	3145
Ala	Ala	Tyr	Ala	Ala	Gln	Gly	Tyr	Lys	Val	Leu	Val	Leu	Asn	Pro	Ser	
							440					445				
gtc	gcc	gcc	acc	cta	ggg	ttc	ggg	gcg	tat	atg	tct	aag	gca	cat	ggg	3193
Val	Ala	Ala	Thr	Leu	Gly	Phe	Gly	Ala	Tyr	Met	Ser	Lys	Ala	His	Gly	
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atc	gac	cct	aac	atc	aga	acc	ggg	gta	agg	acc	atc	acc	acg	ggg	gcc	3241
Ile	Asp	Pro	Asn	Ile	Arg	Thr	Gly	Val	Arg	Thr	Ile	Thr	Thr	Gly	Ala	
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ccc	atc	acg	tac	tcc	acc	tat	ggc	aag	ttt	ctt	gcc	gac	ggg	ggg	tgc	3289
Pro	Ile	Thr	Tyr	Ser	Thr	Tyr	Gly	Lys	Phe	Leu	Ala	Asp	Gly	Gly	Cys	
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tct	ggg	ggc	gcc	tat	gac	atc	ata	ata	tgt	gat	gag	tgc	cac	tca	act	3337
Ser	Gly	Gly	Ala	Tyr	Asp	Ile	Ile	Ile	Cys	Asp	Glu	Cys	His	Ser	Thr	
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gac	tcg	acc	act	atc	ctg	ggc	atc	ggc	aca	gtc	ctg	gac	caa	gcg	gag	3385
Asp	Ser	Thr	Thr	Ile	Leu	Gly	Ile	Gly	Thr	Val	Leu	Asp	Gln	Ala	Glu	
								520				525				
acg	gct	gga	gcg	cga	ctc	gtc	gtg	ctc	gcc	acc	gct	acg	cct	ccg	gga	3433
Thr	Ala	Gly	Ala	Arg	Leu	Val	Val	Leu	Ala	Thr	Ala	Thr	Pro	Pro	Gly	
							535				540					
tcg	gtc	acc	gtg	cca	cat	cca	aac	atc	gag	gag	gtg	gct	ctg	tcc	agc	3481
Ser	Val	Thr	Val	Pro	His	Pro	Asn	Ile	Glu	Glu	Val	Ala	Leu	Ser	Ser	
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act	gga	gaa	atc	ccc	ttt	tat	ggc	aaa	gcc	atc	ccc	atc	gag	acc	atc	3529
Thr	Gly	Glu	Ile	Pro	Phe	Tyr	Gly	Lys	Ala	Ile	Pro	Ile	Glu	Thr	Ile	
									570					575		
aag	ggg	ggg	agg	cac	ctc	att	ttc	tgc	cat	tcc	aag	aag	aaa	tgt	gat	3577
Lys	Gly	Gly	Arg	His	Leu	Ile	Phe	Cys	His	Ser	Lys	Lys	Lys	Cys	Asp	
								585					590			
gag	ctc	gcc	gcg	aag	ctg	tcc	ggc	ctc	gga	ctc	aat	gct	gta	gca	tat	3625
Glu	Leu	Ala	Ala	Lys	Leu	Ser	Gly	Leu	Gly	Leu	Asn	Ala	Val	Ala	Tyr	
								600				605				
tac	cgg	ggc	ctt	gat	gta	tcc	gtc	ata	cca	act	agc	gga	gac	gtc	att	3673
Tyr	Arg	Gly	Leu	Asp	Val	Ser	Val	Ile	Pro	Thr	Ser	Gly	Asp	Val	Ile	
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gtc	gta	gca	acg	gac	gct	cta	atg	acg	ggc	ttt	acc	ggc	gat	ttc	gac	3721
Val	Val	Ala	Thr	Asp	Ala	Leu	Met	Thr	Gly	Phe	Thr	Gly	Asp	Phe	Asp	
										635					640	
tca	gtg	atc	gac	tgc	aat	aca	tgt	gtc	acc	cag	aca	gtc	gac	ttc	agc	3769
Ser	Val	Ile	Asp	Cys	Asn	Thr	Cys	Val	Thr	Gln	Thr	Val	Asp	Phe	Ser	
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ctg Leu	gac Asp	ccg Pro	acc Thr 660	ttc Phe	acc Thr	att Ile	gag Glu	acg Thr 665	acg Thr	acc Thr	gtg Val	cca Pro	caa Gln 670	gac Asp	gcg Ala	3817
gtg Val	tca Ser	cgc Arg 675	tcg Ser	cag Gln	cgg Arg	cga Arg	ggc Gly 680	agg Arg	act Thr	ggt Gly	agg Arg	ggc Gly 685	agg Arg	atg Met	ggc Gly	3865
att Ile	tac Tyr 690	agg Arg	ttt Phe	gtg Val	act Thr	cca Pro 695	gga Gly	gaa Glu	cgg Arg	ccc Pro	tcg Ser 700	ggc Gly	atg Met	ttc Phe	gat Asp	3913
tcc Ser 705	tcg Ser	gtt Val	ctg Leu	tgc Cys	gag Glu 710	tgc Cys	tat Tyr	gac Asp	gcg Ala	ggc Gly 715	tgt Cys	gct Ala	tgg Trp	tac Tyr	gag Glu 720	3961
ctc Leu	acg Thr	ccc Pro	gcc Ala	gag Glu 725	acc Thr	tca Ser	gtt Val	agg Arg	ttg Leu 730	cgg Arg	gct Ala	tac Tyr	cta Leu	aac Asn 735	aca Thr	4009
cca Pro	ggg Gly	ttg Leu	ccc Pro 740	gtc Val	tgc Cys	cag Gln	gac Asp	cat His 745	ctg Leu	gag Glu	ttc Phe	tgg Trp	gag Glu 750	agc Ser	gtc Val	4057
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cag Gln 770	gca Ala	gga Gly	gac Asp	aac Asn	ttc Phe	ccc Pro 775	tac Tyr	ctg Leu	gta Val	gca Ala	tac Tyr 780	cag Gln	gct Ala	acg Thr	gtg Val	4153
tgc Cys 785	gcc Ala	agg Arg	gct Ala	cag Gln	gct Ala 790	cca Pro	cct Pro	cca Pro	tcg Ser	tgg Trp 795	gac Asp	caa Gln	atg Met	tgg Trp	aag Lys 800	4201
tgt Cys	ctc Leu	ata Ile	cgg Arg	cta Leu 805	aag Lys	cct Pro	acg Thr	ctg Leu	cac His 810	ggg Gly	cca Pro	acg Thr	ccc Pro	ctg Leu 815	ctg Leu	4249
tat Tyr	agg Arg	ctg Leu	gga Gly 820	gcc Ala	gtt Val	caa Gln	aac Asn	gag Glu 825	gtt Val	act Thr	acc Thr	aca Thr	cac His 830	ccc Pro	ata Ile	4297
acc Thr	aaa Lys	tac Tyr 835	atc Ile	atg Met	gca Ala	tgc Cys	atg Met 840	tcg Ser	gct Ala	gac Asp	ctg Leu	gag Glu 845	gtc Val	gtc Val	acg Thr	4345
agc Ser	acc Thr 850	tgg Trp	gtg Val	ctg Leu	gta Val	ggc Gly 855	gga Gly	gtc Val	cta Leu	gca Ala	gct Ala 860	ctg Leu	gcc Ala	gcg Ala	tat Tyr	4393
tgc Cys 865	ctg Leu	aca Thr	aca Thr	ggc Gly	agc Ser 870	gtg Val	gtc Val	att Ile	gtg Val	ggc Gly 875	agg Arg	atc Ile	atc Ile	ttg Leu	tcc Ser 880	4441
gga Gly	arg Xaa	ccg Pro	gcc Ala	atc Ile 885	att Ile	ccc Pro	gac Asp	agg Arg	gaa Glu 890	gtc Val	ctt Leu	tac Tyr	cgg Arg	gag Glu 895	ttc Phe	4489
gat Asp	gag Glu	atg Met	gaa Glu 900	gag Glu	tgc Cys	gcc Ala	tca Ser	cac His 905	ctc Leu	cct Pro	tac Tyr	atc Ile	gaa Glu 910	cag Gln	gga Gly	4537

atg Met	cag Gln	ctc Leu 915	gcc Ala	gaa Glu	caa Gln	ttc Phe 920	aaa Lys	cag Gln	aag Lys	gca Ala	atc Ile	ggg Gly 925	ttg Leu	ctg Leu	caa Gln	4585
aca Thr 930	gcc Ala	acc Thr	aag Lys	caa Gln	gcg Ala	gag Glu 935	gct Ala	gct Ala	gct Ala	ccc Pro	gtg Val 940	gtg Val	gaa Glu	tcc Ser	aag Lys	4633
tgg Trp 945	cgg Arg	acc Thr	ctc Leu	gaa Glu	gcc Ala 950	ttc Phe	tgg Trp	gcg Ala	aag Lys	cat His 955	atg Met	tgg Trp	aat Asn	ttc Phe	atc Ile 960	4681
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gcg Ala	ata Ile	gca Ala	tca Ser 980	ctg Leu	atg Met	gca Ala	ttc Phe	aca Thr 985	gcc Ala	tct Ser	atc Ile	acc Thr 990	agc Ser	ccg Pro	ctc Leu	4777
acc Thr	acc Thr	caa Gln 995	cat His	acc Thr	ctc Leu	ctg Leu	ttt Phe 1000	aac Asn	atc Ile	ctg Leu	ggg Gly	gga Gly 1005	tgg Trp	gtg Val	gcc Ala	4825
gcc Ala 1010	caa Gln	ctt Leu	gct Ala	cct Pro	ccc Pro	agc Ser 1015	gct Ala	gct Ala	tct Ser	gct Ala	ttc Phe 1020	gta Val	ggc Gly	gcc Ala	ggc Gly	4873
atc Ile 1025	gct Ala	gga Gly	gcg Ala	gct Ala	gtt Val 1030	ggc Gly	agc Ser	ata Ile	ggc Gly	ctt Leu 1035	ggg Gly	aag Lys	gtg Val	ctt Leu	gtg Val 1040	4921
gat Asp	att Ile	ttg Leu	gca Ala	ggt Gly 1045	tat Tyr	gga Gly	gca Ala	ggg Gly	gtg Val 1050	gca Ala	ggc Gly	gcg Ala	ctc Leu	gtg Val 1055	gcc Ala	4969
ttt Phe	aag Lys	gtc Val 1060	atg Met	agc Ser	ggc Gly	gag Glu	atg Met	ccc Pro 1065	tcc Ser	acc Thr	gag Glu	gac Asp 1070	ctg Leu	gtt Val	aac Asn	5017
cta Leu	ctc Leu	cct Pro 1075	gct Ala	atc Ile	ctc Leu	tcc Ser	cct Pro 1080	ggc Gly	gcc Ala	cta Leu	gtc Val 1085	gtc Val 1085	ggg Gly	gtc Val	gtg Val	5065
tgc Cys 1090	gca Ala	gcg Ala	ata Ile	ctg Leu	cgt Arg	cgg Arg 1095	cac His	gtg Val	ggc Gly	cca Pro	ggg Gly 1100	gag Glu	ggg Gly	gct Ala	gtg Val	5113
cag Gln 1105	tgg Trp	atg Met	aac Asn	cgg Arg	ctg Leu 1110	ata Ile	gcg Ala	ttc Phe	gct Ala	tcg Ser 1115	cgg Arg	ggt Gly	aac Asn	cac His	gtc Val 1120	5161
tcc Ser	ccc Pro	acg Thr	cac His	tat Tyr 1125	gtg Val	cct Pro	gag Glu	agc Ser	gac Asp 1130	gct Ala	gca Ala	gca Ala	cgt Arg	gtc Val 1135	act Thr	5209
cag Gln	atc Ile	ctc Leu	tct Ser 1140	agt Ser	ctt Leu	acc Thr	atc Ile	act Thr 1145	cag Gln	ctg Leu	ctg Leu	aag Lys	agg Arg 1150	ctt Leu	cac His	5257
cag Gln	tgg Trp	atc Ile 1155	aac Asn	gag Glu	gac Asp	tgc Cys	tcc Ser 1160	acg Thr	cca Pro	tgc Cys	tcc Ser	ggc Gly 1165	tcg Ser	tgg Trp	cta Leu	5305

aga Arg	gat Asp	gtt Val	tgg Trp	gat Asp	tgg Trp	ata Ile	tgc Cys	acg Thr	gtg Val	ttg Leu	act Thr	gat Asp	ttc Phe	aag Lys	acc Thr	5353
1170																
tgg Trp	ctc Leu	cag Gln	tcc Ser	aag Lys	ctc Leu	ctg Leu	ccg Pro	cga Arg	ttg Leu	ccg Pro	gga Gly	gtc Val	ccc Pro	ttc Phe	ttc Phe	5401
1185																
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1205																
caa Gln	acc Thr	acc Thr	tgc Cys	cca Pro	tgt Cys	gga Gly	gca Ala	cag Gln	atc Ile	acc Thr	gga Gly	cat His	gtg Val	aaa Lys	aac Asn	5497
1220																
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1235																
gga Gly	aca Thr	ttc Phe	ccc Pro	att Ile	aac Asn	gcg Ala	tac Tyr	acc Thr	acg Thr	ggc Gly	ccc Pro	tgc Cys	acg Thr	ccc Pro	tcc Ser	5593
1250																
ccg Pro	gcg Ala	cca Pro	aat Asn	tat Tyr	tct Ser	agg Arg	gcg Ala	ctg Leu	tgg Trp	ccg Arg	gtg Val	gct Ala	gct Ala	gag Glu	gag Glu	5641
1265																
tac Tyr	gtg Val	gag Glu	gtt Val	acg Thr	cgg Arg	gtg Val	ggg Gly	gat Asp	ttc Phe	cac His	tac Tyr	gtg Val	acg Thr	ggc Gly	atg Met	5689
1285																
acc Thr	act Thr	gac Asp	aac Asn	gta Val	aag Lys	tgc Cys	ccg Pro	tgt Cys	cag Gln	gtt Val	ccg Pro	gcc Ala	ccc Pro	gaa Glu	ttc Phe	5737
1300																
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1315																
aaa Lys	ccc Pro	ctc Leu	cta Leu	cgg Arg	gag Glu	gag Glu	gtc Val	aca Thr	ttc Phe	ctg Leu	gtc Val	ggg Gly	ctc Leu	aat Asn	caa Gln	5833
1330																
tac Tyr	ctg Leu	gtt Val	ggg Gly	tca Ser	cag Gln	ctc Leu	cca Pro	tgc Cys	gag Glu	ccc Pro	gaa Glu	ccg Pro	gac Asp	gta Val	gca Ala	5881
1345																
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1365																
gct Ala	aag Lys	cgt Arg	agg Arg	ctg Leu	gcc Ala	agg Arg	gga Gly	tct Ser	ccc Pro	ccc Pro	tcc Ser	ttg Leu	gcc Ala	agc Ser	tca Ser	5977
1380																
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1395																
cgt Arg	cat His	gac Asp	tcc Ser	ccg Pro	gac Asp	gct Ala	gac Asp	ctc Leu	atc Ile	gag Glu	gcc Ala	aac Asn	ctc Leu	ctg Leu	tgg Trp	6073
1410																
1415																
1420																



cgg	cag	gag	atg	ggc	ggg	aac	atc	acc	cgc	gtg	gag	tca	gaa	aat	aag	6121
Arg	Gln	Glu	Met	Gly	Gly	Asn	Ile	Thr	Arg	Val	Glu	Ser	Glu	Asn	Lys	
1425					1430					1435					1440	
gta	gta	att	ttg	gac	tct	ttc	gag	ccg	ctc	caa	gcg	gag	gag	gat	gag	6169
Val	Val	Ile	Leu	Asp	Ser	Phe	Glu	Pro	Leu	Gln	Ala	Glu	Glu	Asp	Glu	
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agg	gaa	gta	tcc	gtt	ccg	gcg	gag	atc	ctg	cgg	agg	tcc	agg	aaa	ttc	6217
Arg	Glu	Val	Ser	Val	Pro	Ala	Glu	Ile	Leu	Arg	Arg	Ser	Arg	Lys	Phe	
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cct	cga	gcg	atg	ccc	ata	tgg	gca	cgc	ccg	gat	tac	aac	cct	cca	ctg	6265
Pro	Arg	Ala	Met	Pro	Ile	Trp	Ala	Arg	Pro	Asp	Tyr	Asn	Pro	Pro	Leu	
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ttr	gag	tcc	tgg	aag	gac	ccg	gac	tac	gtc	cct	cca	gtg	gta	cac	ggg	6313
Xaa	Glu	Ser	Trp	Lys	Asp	Pro	Asp	Tyr	Val	Pro	Pro	Val	Val	His	Gly	
	1490					1495					1500					
tgt	cca	ttg	ccg	cct	gcc	aag	gcc	cct	ccg	ata	cca	cct	cca	cgg	agg	6361
Cys	Pro	Leu	Pro	Pro	Ala	Lys	Ala	Pro	Pro	Ile	Pro	Pro	Pro	Arg	Arg	
1505					1510					1515					1520	
aag	agg	acg	gtt	gtc	ctg	tca	gaa	tct	acc	gtg	tct	tct	gcc	ttg	gcg	6409
Lys	Arg	Thr	Val	Val	Leu	Ser	Glu	Ser	Thr	Val	Ser	Ser	Ala	Leu	Ala	
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gag	ctc	gcc	aca	aag	acc	ttc	ggc	agc	tcc	gaa	tcg	tcg	gcc	gtc	gac	6457
Glu	Leu	Ala	Thr	Lys	Thr	Phe	Gly	Ser	Ser	Glu	Ser	Ser	Ala	Val	Asp	
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Ser	Gly	Thr	Ala	Thr	Ala	Ser	Pro	Asp	Gln	Pro	Ser	Asp	Asp	Gly	Asp	
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gcg	gga	tcc	gac	gtt	gag	tcg	tac	tcc	tcc	atg	ccc	ccc	ctt	gag	ggg	6553
Ala	Gly	Ser	Asp	Val	Glu	Ser	Tyr	Ser	Ser	Met	Pro	Pro	Leu	Glu	Gly	
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gag	ccg	ggg	gat	ccc	gat	ctc	agc	gac	ggg	tct	tgg	tct	acc	gta	agc	6601
Glu	Pro	Gly	Asp	Pro	Asp	Leu	Ser	Asp	Gly	Ser	Trp	Ser	Thr	Val	Ser	
1585					1590				1595						1600	
gag	gag	gct	agt	gag	gac	gtc	gtc	tgc	tgc	tcg	atg	tcc	tac	aca	tgg	6649
Glu	Glu	Ala	Ser	Glu	Asp	Val	Val	Cys	Cys	Ser	Met	Ser	Tyr	Thr	Trp	
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aca	ggc	gcc	ctg	atc	acg	cca	tgc	gct	gcg	gag	gaa	acc	aag	ctg	ccc	6697
Thr	Gly	Ala	Leu	Ile	Thr	Pro	Cys	Ala	Ala	Glu	Glu	Thr	Lys	Leu	Pro	
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atc	aat	gca	ctg	agc	aac	tct	ttg	ctc	cgt	cac	cac	aac	ttg	gtc	tat	6745
Ile	Asn	Ala	Leu	Ser	Asn	Ser	Leu	Leu	Arg	His	His	Asn	Leu	Val	Tyr	
		1635					1640					1645				
gct	aca	aca	tct	cgc	agc	gca	agc	ctg	cgg	cag	aag	aag	gtc	acc	ttt	6793
Ala	Thr	Thr	Ser	Arg	Ser	Ala	Ser	Leu	Arg	Gln	Lys	Lys	Val	Thr	Phe	
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Met Lys Ala Lys Ala Ser Thr Val Lys Ala Lys Leu Leu Ser Val Glu	1685 1690 1695
gaa gcc tgt aag ctg acg ccc cca cat tcg gcc aga tct aaa ttt ggc	6937
Glu Ala Cys Lys Leu Thr Pro Pro His Ser Ala Arg Ser Lys Phe Gly	1700 1705 1710
tat ggg gca aag gac gtc cgg aac cta tcc agc aag gcc gtt aac cac	6985
Tyr Gly Ala Lys Asp Val Arg Asn Leu Ser Ser Lys Ala Val Asn His	1715 1720 1725
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Ile Arg Ser Val Trp Lys Asp Leu Leu Glu Asp Thr Glu Thr Pro Ile	1730 1735 1740
gac acc acc atc atg gca aaa aat gag gtt ttc tgc gtc caa cca gag	7081
Asp Thr Thr Ile Met Ala Lys Asn Glu Val Phe Cys Val Gln Pro Glu	1745 1750 1755 1760
aag ggg ggc cgc aag cca gct cgc ctt atc gta ttc cca gat ttg ggg	7129
Lys Gly Gly Arg Lys Pro Ala Arg Leu Ile Val Phe Pro Asp Leu Gly	1765 1770 1775
gtt cgt gtg tgc gag aaa atg gcc ctt tac gat gtg gtc tcc acc ctc	7177
Val Arg Val Cys Glu Lys Met Ala Leu Tyr Asp Val Val Ser Thr Leu	1780 1785 1790
cct cag gcc gtg atg ggc tct tca tac gga ttc caa tac tct cct gga	7225
Pro Gln Ala Val Met Gly Ser Ser Tyr Gly Phe Gln Tyr Ser Pro Gly	1795 1800 1805
cag cgg gtc gag ttc ctg gtg aat gcc tgg aaa gcg aag aaa tgc cct	7273
Gln Arg Val Glu Phe Leu Val Asn Ala Trp Lys Ala Lys Lys Cys Pro	1810 1815 1820
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Met Gly Phe Ala Tyr Asp Thr Arg Cys Phe Asp Ser Thr Val Thr Glu	1825 1830 1835 1840
aat gac atc cgt gtt gag gag tca atc tac caa tgt tgt gac ttg gcc	7369
Asn Asp Ile Arg Val Glu Glu Ser Ile Tyr Gln Cys Cys Asp Leu Ala	1845 1850 1855
ccc gaa gcc aga cag gcc ata agg tcg ctc aca gag cgg ctt tac atc	7417
Pro Glu Ala Arg Gln Ala Ile Arg Ser Leu Thr Glu Arg Leu Tyr Ile	1860 1865 1870
ggg ggc ccc ctg act aat tct aaa ggg cag aac tgc ggc tat cgc cgg	7465
Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn Cys Gly Tyr Arg Arg	1875 1880 1885
tgc cgc gcg agc ggt gta ctg acg acc agc tgc ggt aat acc ctc aca	7513
Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys Gly Asn Thr Leu Thr	1890 1895 1900
tgt tac ttg aag gcc gct gcg gcc tgt cga gct gcg aag ctc cag gac	7561
Cys Tyr Leu Lys Ala Ala Ala Ala Cys Arg Ala Ala Lys Leu Gln Asp	1905 1910 1915 1920
tgc acg atg ctc gta tgc gga gac gac ctt gtc gtt atc tgt gaa agc	7609
Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val Val Ile Cys Glu Ser	1925 1930 1935

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gat gca tct ggc aaa agg gtg tac tat ctc acc cgt gac ccc acc acc Asp Ala Ser Gly Lys Arg Val Tyr Tyr Leu Thr Arg Asp Pro Thr Thr 1985 1990 1995 2000	7801
ccc ctt gcg cgg gct gcg tgg gag aca gct aga cac act cca gtc aat Pro Leu Ala Arg Ala Ala Trp Glu Thr Ala Arg His Thr Pro Val Asn 2005 2010 2015	7849
tcc tgg cta ggc aac atc atc atg tat gcg ccc acc ttg tgg gca agg Ser Trp Leu Gly Asn Ile Ile Met Tyr Ala Pro Thr Leu Trp Ala Arg 2020 2025 2030	7897
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ctt gaa aaa gcc cta gat tgt cag atc tac ggg gcc tgt tac tcc att Leu Glu Lys Ala Leu Asp Cys Gln Ile Tyr Gly Ala Cys Tyr Ser Ile 2050 2055 2060	7993
gag cca ctt gac cta cct cag atc att caa cga ctc cac ggc ctt agc Glu Pro Leu Asp Leu Pro Gln Ile Ile Gln Arg Leu His Gly Leu Ser 2065 2070 2075 2080	8041
gca ttt tca ctc cat agt tac tct cca ggt gag atc aat agg gtg gct Ala Phe Ser Leu His Ser Tyr Ser Pro Gly Glu Ile Asn Arg Val Ala 2085 2090 2095	8089
tca tgc ctc agg aaa ctt ggg gta ccg ccc ttg cga gtc tgg aga cat Ser Cys Leu Arg Lys Leu Gly Val Pro Pro Leu Arg Val Trp Arg His 2100 2105 2110	8137
cgg gcc aga agt gtc cgc gct agg cta ctg tcc cag ggg ggg agg gct Arg Ala Arg Ser Val Arg Ala Arg Leu Leu Ser Gln Gly Gly Arg Ala 2115 2120 2125	8185
gcc act tgt ggc aag tac ctc ttc aac tgg gca gta agg acc aag ctc Ala Thr Cys Gly Lys Tyr Leu Phe Asn Trp Ala Val Arg Thr Lys Leu 2130 2135 2140	8233
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 Val Gly Ile Tyr Leu Leu Pro Asn Arg \*  
 2195 2200

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 35 40 45  
 Gln Val Trp Ile Pro Pro Leu Asn Val Arg Gly Gly Arg Asp Ala Val  
 50 55 60  
 Ile Leu Leu Thr Cys Ala Ile His Pro Glu Leu Ile Phe Thr Ile Thr  
 65 70 75 80  
 Lys Ile Leu Leu Ala Ile Leu Gly Pro Leu Met Val Leu Gln Ala Gly  
 85 90 95  
 Ile Thr Lys Val Pro Tyr Phe Val Arg Ala His Gly Leu Ile Arg Ala  
 100 105 110  
 Cys Met Leu Val Arg Lys Val Ala Gly Gly His Tyr Val Gln Met Ala  
 115 120 125  
 Leu Met Lys Leu Ala Ala Leu Thr Gly Thr Tyr Val Tyr Asp His Leu  
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 Thr Pro Leu Arg Asp Trp Ala His Ala Gly Leu Arg Asp Leu Ala Val  
 145 150 155 160  
 Ala Val Glu Pro Val Phe Ser Asp Met Glu Thr Lys Val Ile Thr  
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 Trp Gly Ala Asp Thr Ala Ala Cys Gly Asp Ile Ile Leu Gly Leu Pro  
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 Val Ser Ala Arg Arg Gly Arg Glu Ile His Leu Gly Pro Ala Asp Ser  
 195 200 205  
 Leu Glu Gly Gln Gly Trp Arg Leu Leu Gly Cys Ile Ile Thr Ser Leu Thr Gly  
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 Gln Gln Thr Arg Gly Leu Leu Gly Cys Ile Ile Thr Ser Leu Thr Gly  
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 Thr Gln Ser Phe Leu Ala Thr Cys Val Asn Gly Val Cys Trp Thr Val  
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 Tyr His Gly Ala Gly Ser Lys Thr Leu Ala Gly Pro Lys Gly Pro Ile  
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 Pro Pro Gly Ala Arg Ser Leu Thr Pro Cys Thr Cys Gly Ser Ser Asp  
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Leu	Tyr	Leu	Val	Thr	Arg	His	Ala	Asp	Val	Ile	Pro	Val	Arg	Arg	Arg
Gly	Asp	Ser	Arg	Gly	Ser	Leu	Leu	Ser	Pro	Arg	Pro	Val	Ser	Tyr	Leu
Lys	Gly	Ser	Ser	Gly	Gly	Pro	Leu	Leu	Cys	Pro	Ser	Gly	His	Ala	Val
Gly	Ile	Phe	Arg	Ala	Ala	Val	Cys	Thr	Arg	Gly	Val	Ala	Lys	Ala	Val
Asp	Phe	Val	Pro	Val	Glu	Ser	Met	Glu	Thr	Thr	Met	Arg	Ser	Pro	Val
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Ala	His	Leu	His	Ala	Pro	Thr	Gly	Ser	Gly	Lys	Ser	Thr	Lys	Val	Pro
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Ile	Asp	Pro	Asn	Ile	Arg	Thr	Gly	Val	Arg	Thr	Ile	Thr	Thr	Gly	Ala
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Val	Val	Ala	Thr	Asp	Ala	Leu	Met	Thr	Gly	Phe	Thr	Gly	Asp	Phe	Asp
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Ser	Val	Ile	Asp	Cys	Asn	Thr	Cys	Val	Thr	Gln	Thr	Val	Asp	Phe	Ser
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Val	Ser	Arg	Ser	Gln	Arg	Arg	Gly	Arg	Thr	Gly	Arg	Gly	Arg	Met	Gly
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Ile	Tyr	Arg	Phe	Val	Thr	Pro	Gly	Glu	Arg	Pro	Ser	Gly	Met	Phe	Asp
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Ser	Ser	Val	Leu	Cys	Glu	Cys	Tyr	Asp	Ala	Gly	Cys	Ala	Trp	Tyr	Glu
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Leu	Thr	Pro	Ala	Glu	Thr	Ser	Val	Arg	Leu	Arg	Ala	Tyr	Leu	Asn	Thr
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Pro	Gly	Leu	Pro	Val	Cys	Gln	Asp	His	Leu	Glu	Phe	Trp	Glu	Ser	Val
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Gln	Ala	Gly	Asp	Asn	Phe	Pro	Tyr	Leu	Val	Ala	Tyr	Gln	Ala	Thr	Val
	770					775					780				
Cys	Ala	Arg	Ala	Gln	Ala	Pro	Pro	Pro	Ser	Trp	Asp	Gln	Met	Trp	Lys
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Cys	Leu	Ile	Arg	Leu	Lys	Pro	Thr	Leu	His	Gly	Pro	Thr	Pro	Leu	Leu
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 Ser Thr Trp Val Leu Val Gly Gly Val Leu Ala Ala Leu Ala Tyr  
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1845 1850 1855

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agcgcatcgc	cttctatcgc	cttcttgacg	agttcttctg	agttcgcgcc	cagatgttaa	1200
cagaccacaa	cggtttccct	ctagcgggat	caattccgcc	ccccccccta	acgttactgg	1260
ccgaagccgc	ttggaataag	gccggtgtgc	gtttgtctat	atgttatttt	ccaccatatt	1320
gccgtctttt	ggcaatgtga	gggcccggaa	acctgtccct	gtcttcttga	cgagcatttc	1380
taggggtctt	tccccctctg	ccaaaggaa	gcaaggctcg	ttgaatgtcg	tgaaggaagc	1440
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gaacccccca	cctggcgaca	ggtgcctctg	cgccaaaag	ccacgtgtat	aagatacacc	1560
tgcaaaggcg	gcacaacccc	agtgccacgt	tgtgagttgg	atagttgtgg	aaagagtcaa	1620
atggctctcc	tcaagcgtat	tcaacaaggg	gctgaaggat	gcccagaagg	tacccatttg	1680
taatggatct	gatctggggc	ctcgggtgcac	atgcctttaca	tgtgtttagt	cgagggttaga	1740
aaacgtctag	gccccccgaa	ccacggggac	gtggttttcc	tttgaaaaac	acgataatac	1800
c atg gac cgg gag atg		gca gca tcg tgc gga ggc gcg gtt ttc gta ggt				1849
Met Asp Arg Glu Met		Ala Ala Ser Cys Gly Gly Ala Val Phe Val Gly				
1	5	10	15			

ctg	ata	ctc	ttg	acc	ttg	tca	ccg	cac	tat	aag	ctg	ttc	ctc	gct	agg	1897
Leu	Ile	Leu	Leu	Thr	Leu	Ser	Pro	His	Tyr	Lys	Leu	Phe	Leu	Ala	Arg	
			20					25					30			

ctc	ata	tgg	tgg	tta	caa	tat	ttt	atc	acc	agg	gcc	gag	gca	cac	ttg	1945
Leu	Ile	Trp	Trp	Leu	Gln	Tyr	Phe	Ile	Thr	Arg	Ala	Glu	Ala	His	Leu	
		35				40					45					

caa	gtg	tgg	atc	ccc	ccc	ctc	aac	gtt	cgg	ggg	ggc	cg	gat	gcc	gtc	1993
Gln	Val	Trp	Ile	Pro	Pro	Leu	Asn	Val	Arg	Gly	Gly	Arg	Asp	Ala	Val	
	50					55					60					

atc	ctc	ctc	acg	tgc	gcg	atc	cac	cca	gag	cta	atc	ttt	acc	atc	acc	2041
Ile	Leu	Leu	Thr	Cys	Ala	Ile	His	Pro	Glu	Leu	Ile	Phe	Thr	Ile	Thr	
	65				70					75					80	

aaa	atc	ttg	ctc	gcc	ata	ctc	ggt	cca	ctc	atg	gtg	ctc	cag	gct	ggt	2089
Lys	Ile	Leu	Leu	Ala	Ile	Leu	Gly	Pro	Leu	Met	Val	Leu	Gln	Ala	Gly	
				85				90						95		

ata	acc	aaa	gtg	ccg	tac	ttc	gtg	cg	gca	cac	ggg	ctc	att	cgt	gca	2137
Ile	Thr	Lys	Val	Pro	Tyr	Phe	Val	Arg	Ala	His	Gly	Leu	Ile	Arg	Ala	
			100					105					110			

tgc	atg	ctg	gtg	cgg	aag	gtt	gct	ggg	ggt	cat	tat	gtc	caa	atg	gct	2185
Cys	Met	Leu	Val	Arg	Lys	Val	Ala	Gly	Gly	His	Tyr	Val	Gln	Met	Ala	
		115					120					125				

ctc	atg	aag	ttg	gcc	gca	ctg	aca	ggt	acg	tac	gtt	tat	gac	cat	ctc	2233
Leu	Met	Lys	Leu	Ala	Ala	Leu	Thr	Gly	Thr	Tyr	Val	Tyr	Asp	His	Leu	
	130					135					140					

acc	cca	ctg	cgg	gac	tgg	gcc	cac	gcg	ggc	cta	cga	gac	ctt	gcg	gtg	2281
Thr	Pro	Leu	Arg	Asp	Trp	Ala	His	Ala	Gly	Leu	Arg	Asp	Leu	Ala	Val	
	145				150					155					160	

gca	gtt	gag	ccc	gtc	gtc	ttc	tct	gat	atg	gag	acc	aag	gtt	atc	acc	2329
Ala	Val	Glu	Pro	Val	Val	Phe	Ser	Asp	Met	Glu	Thr	Lys	Val	Ile	Thr	
										25						

165								170								175	
tgg	ggg	gca	gac	acc	gcg	gcg	tgt	ggg	gac	atc	atc	ttg	ggc	ctg	ccc	2377	
Trp	Gly	Ala	Asp 180	Thr	Ala	Ala	Cys	Gly 185	Asp	Ile	Ile	Leu	Gly 190	Leu	Pro		
gtc	tcc	gcc	cgc	agg	ggg	agg	gag	ata	cat	ctg	gga	ccg	gca	gac	agc	2425	
Val	Ser	Ala 195	Arg	Arg	Gly	Arg	Glu 200	Ile	His	Leu	Gly	Pro 205	Ala	Asp	Ser		
ctt	gaa	ggg	cag	ggg	tgg	cga	ctc	ctc	gcg	cct	att	acg	gcc	tac	tcc	2473	
Leu	Glu 210	Gly	Gln	Gly	Trp	Arg 215	Leu	Leu	Ala	Pro	Ile 220	Thr	Ala	Tyr	Ser		
caa	cag	acg	cga	ggc	cta	ctt	ggc	tgc	atc	atc	act	agc	ctc	aca	ggc	2521	
Gln 225	Gln	Thr	Arg	Gly	Leu 230	Leu	Gly	Cys	Ile	Ile 235	Thr	Ser	Leu	Thr	Gly 240		
cgg	gac	agg	aac	cag	gtc	gag	ggg	gag	gtc	caa	gtg	gtc	tcc	acc	gca	2569	
Arg	Asp	Arg	Asn	Gln 245	Val	Glu	Gly	Glu	Val 250	Gln	Val	Val	Ser	Thr 255	Ala		
aca	caa	tct	ttc	ctg	gcg	acc	tgc	gtc	aat	ggc	gtg	tgt	tgg	act	gtc	2617	
Thr	Gln	Ser	Phe 260	Leu	Ala	Thr	Cys	Val 265	Asn	Gly	Val	Cys	Trp 270	Thr	Val		
tat	cat	ggt	gcc	ggc	tca	aag	acc	ctt	gcc	ggc	cca	aag	ggc	cca	atc	2665	
Tyr	His	Gly 275	Ala	Gly	Ser	Lys	Thr 280	Leu	Ala	Gly	Pro	Lys 285	Gly	Pro	Ile		
acc	caa	atg	tac	acc	aat	gtg	gac	cag	gac	ctc	gtc	ggc	tgg	caa	gcg	2713	
Thr	Gln 290	Met	Tyr	Thr	Asn	Val 295	Asp	Gln	Asp	Leu	Val 300	Gly	Trp	Gln	Ala		
ccc	ccc	ggg	gcg	cgt	tcc	ttg	aca	cca	tgc	acc	tgc	ggc	agc	tcg	gac	2761	
Pro 305	Pro	Gly	Ala	Arg	Ser 310	Leu	Thr	Pro	Cys	Thr 315	Cys	Gly	Ser	Ser	Asp 320		
ctt	tac	ttg	gtc	acg	aag	cat	gcc	gat	gtc	att	ccg	gtg	cgc	cgg	cgg	2809	
Leu	Tyr	Leu	Val	Thr 325	Lys	His	Ala	Asp	Val 330	Ile	Pro	Val	Arg	Arg 335	Arg		
ggc	gac	agc	agg	ggg	agc	cta	ctc	tcc	ccc	cgg	ccc	gtc	tcc	tac	ttg	2857	
Gly	Asp	Ser	Arg 340	Gly	Ser	Leu	Leu	Ser 345	Pro	Arg	Pro	Val	Ser 350	Tyr	Leu		
aag	ggc	tct	tcg	ggc	ggt	cca	ctg	ctc	tgc	ccc	tcg	ggg	cac	gct	gtg	2905	
Lys	Gly	Ser 355	Ser	Gly	Gly	Pro	Leu 360	Leu	Cys	Pro	Ser	Gly 365	His	Ala	Val		
ggc	atc	ttt	cgg	gct	gcc	gtg	tgc	acc	cga	ggg	gtt	gcg	aag	gcg	gtg	2953	
Gly	Ile 370	Phe	Arg	Ala	Ala	Val 375	Cys	Thr	Arg	Gly	Val 380	Ala	Lys	Ala	Val		
gac	ttt	gta	ccc	gtc	gag	tct	atg	gaa	acc	act	atg	cgg	tcc	ccg	gtc	3001	
Asp 385	Phe	Val	Pro	Val	Glu 390	Ser	Met	Glu	Thr	Thr 395	Met	Arg	Ser	Pro	Val 400		
ttc	acg	gac	aac	tcg	tcc	cct	ccg	gcc	gta	ccg	cag	aca	ttc	cag	gtg	3049	
Phe	Thr	Asp	Asn	Ser 405	Ser	Pro	Pro	Ala	Val 410	Pro	Gln	Thr	Phe	Gln 415	Val		
gcc	cat	cta	cac	gcc	cct	act	ggt	agc	ggc	aag	agc	act	aag	gtg	ccg	3097	
Ala	His	Leu	His	Ala	Pro	Thr	Gly	Ser	Gly	Lys 26	Ser	Thr	Lys	Val	Pro		

420				425				430								
gct Ala	gcg Ala	tat Tyr 435	gca Ala	gcc Ala	caa Gln	ggg Gly	tat Tyr 440	aag Lys	gtg Val	ctt Leu	gtc Val	ctg Leu 445	aac Asn	ccg Pro	tcc Ser	3145
gtc Val	gcc Ala 450	gcc Ala	acc Thr	cta Leu	ggg Gly	ttc Phe 455	ggg Gly	gcg Ala	tat Tyr	atg Met	tct Ser 460	aag Lys	gca Ala	cat His	ggg Gly	3193
atc Ile 465	gac Asp	cct Pro	aac Asn	atc Ile	aga Arg 470	acc Thr	ggg Gly	gta Val	agg Arg	acc Thr 475	atc Ile	acc Thr	acg Thr	ggg Gly	gcc Ala 480	3241
ccc Pro	atc Ile	acg Thr	tac Tyr	tcc Ser 485	acc Thr	tat Tyr	ggc Gly	aag Lys	ttt Phe 490	ctt Leu	gcc Ala	gac Asp	ggg Gly	ggg Gly 495	tgc Cys	3289
tct Ser	ggg Gly	ggc Gly	gcc Ala 500	tat Tyr	gac Asp	atc Ile	ata Ile 505	ata Ile 505	tgt Cys	gat Asp	gag Glu	tgc Cys	cac His 510	tca Ser	act Thr	3337
gac Asp	tcg Ser	acc Thr 515	act Thr	atc Ile	ctg Leu	ggc Gly	atc Ile 520	ggc Gly	aca Thr	gtc Val	ctg Leu	gac Asp 525	caa Gln	gcg Ala	gag Glu	3385
acg Thr	gct Ala 530	gga Gly	gcg Ala	cga Arg	ctc Leu	gtc Val 535	gtg Val	ctc Leu	gcc Ala	acc Thr	gct Ala 540	acg Thr	cct Pro	ccg Pro	gga Gly	3433
tcg Ser 545	gtc Val	acc Thr	gtg Val	cca Pro	cat His 550	cca Pro	aac Asn	atc Ile	gag Glu	gag Glu 555	gtg Val	gct Ala	ctg Leu	tcc Ser	agc Ser 560	3481
act Thr	gga Gly	gaa Glu	atc Ile	ccc Pro 565	ttt Phe	tat Tyr	ggc Gly	aaa Lys	gcc Ala 570	atc Ile	ccc Pro	atc Ile	gag Glu	acc Thr 575	atc Ile	3529
aag Lys	ggg Gly	ggg Gly	agg Arg 580	cac His	ctc Leu	att Ile	ttc Phe	tgc Cys 585	cat His	tcc Ser	aag Lys	aag Lys	aaa Lys 590	tgt Cys	gat Asp	3577
gag Glu	ctc Leu	gcc Ala 595	gcg Ala	aag Lys	ctg Leu	tcc Ser	ggc Gly 600	ctc Leu	gga Gly	ctc Leu	aat Asn	gct Ala 605	gta Val	gca Ala	tat Tyr	3625
tac Tyr	cgg Arg 610	ggc Gly	ctt Leu	gat Asp	gta Val	tcc Ser 615	gtc Val	ata Ile	cca Pro	act Thr	agc Ser 620	gga Gly	gac Asp	gtc Val	att Ile	3673
gtc Val 625	gta Val	gca Ala	acg Thr	gac Asp	gct Ala 630	cta Leu	atg Met	acg Thr	ggc Gly	ttt Phe 635	acc Thr	ggc Gly	gat Asp	ttc Phe	gac Asp 640	3721
tca Ser	gtg Val	atc Ile	gac Asp	tgc Cys 645	aat Asn	aca Thr	tgt Cys	gtc Val	acc Thr 650	cag Gln	aca Thr	gtc Val	gac Asp	ttc Phe 655	agc Ser	3769
ctg Leu	gac Asp	ccg Pro	acc Thr 660	ttc Phe	acc Thr	att Ile	gag Glu	acg Thr 665	acg Thr	acc Thr	gtg Val	cca Pro	caa Gln 670	gac Asp	gcg Ala	3817
gtg Val	tca Ser	cgc Arg	tcg Ser	cag Gln	cgg Arg	cga Arg	ggc Gly	agg Arg	act Thr	ggg Gly 27	agg Arg	ggc Gly	agg Arg	atg Met	ggc Gly	3865

675					680					685									
att Ile	tac Tyr 690	agg Arg	ttt Phe	gtg Val	act Thr	cca Pro 695	gga Gly	gaa Glu	cgg Arg	ccc Pro	tcg Ser 700	ggc Gly	atg Met	ttc Phe	gat Asp	3913			
tcc Ser 705	tcg Ser	gtt Val	ctg Leu	tgc Cys 710	gag Glu	tgc Cys	tat Tyr	gac Asp	gcg Ala	ggc Gly 715	tgt Cys	gct Ala	tgg Trp	tac Tyr	gag Glu 720	3961			
ctc Leu	acg Thr	ccc Pro	gcc Ala	gag Glu 725	acc Thr	tca Ser	gtt Val	agg Arg	ttg Leu 730	cgg Arg	gct Ala	tac Tyr	cta Leu	aac Asn 735	aca Thr	4009			
cca Pro	ggg Gly	ttg Leu	ccc Pro 740	gtc Val	tgc Cys	cag Gln	gac Asp	cat His 745	ctg Leu	gag Glu	ttc Phe	tgg Trp	gag Glu 750	ggc Gly	gtc Val	4057			
ttt Phe	aca Thr	ggc Gly 755	ctc Leu	acc Thr	cac His	ata Ile	gac Asp 760	gcc Ala	cat His	ttc Phe	ttg Leu	tcc Ser 765	cag Gln	act Thr	aag Lys	4105			
cag Gln	gca Ala 770	gga Gly	gac Asp	aac Asn	ttc Phe	ccc Pro 775	tac Tyr	ctg Leu	gta Val	gca Ala	tac Tyr 780	cag Gln	gct Ala	acg Thr	gtg Val	4153			
tgc Cys 785	gcc Ala	agg Arg	gct Ala	cag Gln 790	gct Ala	cca Pro	cct Pro	cca Pro	tcg Ser	tgg Trp 795	gac Asp	caa Gln	atg Met	tgg Trp	aag Lys 800	4201			
tgt Cys	ctc Leu	ata Ile	cgg Arg	cta Leu 805	aag Lys	cct Pro	acg Thr	ctg Leu	cac His 810	ggg Gly	cca Pro	acg Thr	ccc Pro	ctg Leu 815	ctg Leu	4249			
tat Tyr	agg Arg	ctg Leu	gga Gly 820	gcc Ala	gtt Val	caa Gln	aac Asn	gag Glu 825	gtt Val	act Thr	acc Thr	aca Thr	cac His 830	ccc Pro	ata Ile	4297			
acc Thr	aaa Lys	tac Tyr 835	atc Ile	atg Met	gca Ala	tgc Cys	atg Met 840	tcg Ser	gct Ala	gac Asp	ctg Leu	gag Glu 845	gtc Val	gtc Val	acg Thr	4345			
agc Ser	acc Thr 850	tgg Trp	gtg Val	ctg Leu	gta Val	ggc Gly 855	gga Gly	gtc Val	cta Leu	gca Ala	gct Ala 860	ctg Leu	gcc Ala	gcg Ala	tat Tyr	4393			
tgc Cys 865	ctg Leu	aca Thr	aca Thr	ggc Gly	agc Ser 870	gtg Val	gtc Val	att Ile	gtg Val	ggc Gly 875	agg Arg	atc Ile	atc Ile	ttg Leu	tcc Ser 880	4441			
gga Gly	agg Arg	ccg Pro	gcc Ala	atc Ile 885	att Ile	ccc Pro	gac Asp	agg Arg	gaa Glu 890	gtc Val	ctt Leu	tac Tyr	cgg Arg	gag Glu 895	ttc Phe	4489			
gat Asp	gag Glu	atg Met	gaa Glu 900	gag Glu	tgc Cys	gcc Ala	tca Ser	cac His 905	ctc Leu	cct Pro	tac Tyr	atc Ile	gaa Glu 910	cag Gln	gga Gly	4537			
atg Met	cag Gln	ctc Leu 915	gcc Ala	gaa Glu	caa Gln	ttc Phe	aaa Lys 920	cag Gln	aag Lys	gca Ala	atc Ile	ggg Gly 925	ttg Leu	ctg Leu	caa Gln	4585			
aca Thr	gcc Ala	acc Thr	aag Lys	caa Gln	gcg Ala	gag Glu	gct Ala	gct Ala	gct Ala	ccc Pro 28	gtg Val	gtg Val	gaa Glu	tcc Ser	aag Lys	4633			

930					935					940						
tgg Trp 945	cgg Arg	acc Thr	ctc Leu	gaa Glu	gcc Ala 950	ttc Phe	tgg Trp	gcg Ala	aag Lys	cat His 955	atg Met	tgg Trp	aat Asn	ttc Phe	atc Ile 960	4681
agc Ser	ggg Gly	ata Ile	caa Gln	tat Tyr 965	tta Leu	gca Ala	ggc Gly	ttg Leu	tcc Ser 970	act Thr	ctg Leu	cct Pro	ggc Gly 975	aac Asn	ccc Pro	4729
gcg Ala	ata Ile	gca Ala	tca Ser 980	ctg Leu	atg Met	gca Ala	ttc Phe	aca Thr 985	gcc Ala	tct Ser	atc Ile	acc Thr 990	agc Ser	ccg Pro	ctc Leu	4777
acc Thr	acc Thr	caa Gln 995	cat His	acc Thr	ctc Leu	ctg Leu	ttt Phe 1000	aac Asn	atc Ile	ctg Leu	ggg Gly 1005	gga Gly	tgg Trp	gtg Val	gcc Ala	4825
gcc Ala 1010	caa Gln	ctt Leu	gct Ala	cct Pro	ccc Pro	agc Ser 1015	gct Ala	gct Ala	tcc Ser	gct Ala	ttc Phe 1020	gta Val	ggc Gly	gcc Ala	ggc Gly	4873
atc Ile 1025	gct Ala	gga Gly	gcg Ala	gct Ala	gtt Val 1030	ggc Gly	agc Ser	ata Ile	ggc Gly	ctt Leu 1035	ggg Gly	aag Lys	gtg Val	ctt Leu	gtg Val 1040	4921
gat Asp	att Ile	ttg Leu	gca Ala	ggt Gly 1045	tat Tyr	gga Gly	gca Ala	ggg Gly	gtg Val 1050	gca Ala	ggc Gly	gcg Ala	ctc Leu	gtg Val 1055	gcc Ala	4969
ttt Phe	aag Lys	gtc Val	atg Met 1060	agc Ser	ggc Gly	gag Glu	atg Met	ccc Pro 1065	tcc Ser	acc Thr	gag Glu	gac Asp	ctg Leu 1070	gtt Val	aac Asn	5017
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tgc Cys 1090	gca Ala	gcg Ala	ata Ile	ctg Leu	cgt Arg	cgg Arg 1095	cac His	gtg Val	ggc Gly	cca Pro	ggg Gly 1100	gag Glu	ggg Gly	gct Ala	gtg Val	5113
cag Gln 1105	tgg Trp	atg Met	aac Asn	cgg Arg	ctg Leu 1110	ata Ile	gcg Ala	ttc Phe	gct Ala	tcg Ser 1115	cgg Arg	ggt Gly	aac Asn	cac His	gtc Val 1120	5161
tcc Ser	ccc Pro	acg Thr	cac His	tat Tyr 1125	gtg Val	cct Pro	gag Glu	agc Ser	gac Asp 1130	gct Ala	gca Ala	gca Ala	cgt Arg	gtc Val 1135	act Thr	5209
cag Gln	atc Ile	ctc Leu	tct Ser 1140	agt Ser	ctt Leu	acc Thr	atc Ile	act Thr 1145	cag Gln	ctg Leu	ctg Leu	aag Lys	agg Arg 1150	ctt Leu	cac His	5257
cag Gln	tgg Trp	atc Ile 1155	aac Asn	gag Glu	gac Asp	tgc Cys	tcc Ser 1160	acg Thr	cca Pro	tgc Cys	tcc Ser	ggc Gly 1165	tcg Ser	tgg Trp	cta Leu	5305
aga Arg 1170	gat Asp	gtt Val	tgg Trp	gat Asp	tgg Trp	ata Ile 1175	tgc Cys	acg Thr	gtg Val	ttg Leu	act Thr 1180	gat Asp	ttc Phe	aag Lys	gcc Ala	5353
tgg Trp	ctc Leu	cag Gln	tcc Ser	aag Lys	ctc Leu	ctg Leu	ccg Pro	cga Arg	ttg Leu	ccg Pro 29	gga Gly	gtc Val	ccc Pro	ttc Phe	ttc Phe	5401

1185		1190		1195		1200										
tca	tgt	caa	cgt	ggg	tac	aag	gga	gtc	tgg	cgg	ggc	gac	ggc	atc	atg	5449
Ser	Cys	Gln	Arg	Gly	Tyr	Lys	Gly	Val	Trp	Arg	Gly	Asp	Gly	Ile	Met	
				1205					1210					1215		
caa	acc	acc	tgc	cca	tgt	gga	gca	cag	atc	acc	gga	cat	gtg	aaa	aac	5497
Gln	Thr	Thr	Cys	Pro	Cys	Gly	Ala	Gln	Ile	Thr	Gly	His	Val	Lys	Asn	
			1220					1225					1230			
tgt	tcc	atg	agg	atc	gtg	ggg	cct	agg	acc	tgt	agt	aac	acg	tgg	cat	5545
Cys	Ser	Met	Arg	Ile	Val	Gly	Pro	Arg	Thr	Cys	Ser	Asn	Thr	Trp	His	
		1235					1240					1245				
gga	aca	ttc	ccc	att	aac	gcg	tac	acc	acg	ggc	ccc	tgc	acg	ccc	tcc	5593
Gly	Thr	Phe	Pro	Ile	Asn	Ala	Tyr	Thr	Thr	Gly	Pro	Cys	Thr	Pro	Ser	
	1250					1255					1260					
ccg	gcg	cca	aat	tat	tct	agg	gcg	ctg	tgg	cgg	gtg	gct	gct	gag	gag	5641
Pro	Ala	Pro	Asn	Tyr	Ser	Arg	Ala	Leu	Trp	Arg	Val	Ala	Ala	Glu	Glu	
1265					1270				1275					1280		
tac	gtg	gag	gtt	acg	cga	gtg	ggg	gat	ttc	cac	tac	gtg	acg	ggc	atg	5689
Tyr	Val	Glu	Val	Thr	Arg	Val	Gly	Asp	Phe	His	Tyr	Val	Thr	Gly	Met	
				1285					1290					1295		
acc	act	gac	aac	gta	aag	tgc	ccg	tgt	cag	gtt	ccg	gcc	ccc	gaa	ttc	5737
Thr	Thr	Asp	Asn	Val	Lys	Cys	Pro	Cys	Gln	Val	Pro	Ala	Pro	Glu	Phe	
			1300					1305					1310			
ttc	aca	gaa	gtg	gat	ggg	gtg	cgg	ttg	cac	agg	tac	gct	cca	gcg	tgc	5785
Phe	Thr	Glu	Val	Asp	Gly	Val	Arg	Leu	His	Arg	Tyr	Ala	Pro	Ala	Cys	
		1315					1320					1325				
aaa	ccc	ctc	cta	cgg	gag	gag	gtc	aca	ttc	ctg	gtc	ggg	ctc	aat	caa	5833
Lys	Pro	Leu	Leu	Arg	Glu	Glu	Val	Thr	Phe	Leu	Val	Gly	Leu	Asn	Gln	
	1330					1335					1340					
tac	ctg	gtt	ggg	tca	cag	ctc	cca	tgc	gag	ccc	gaa	ctg	gac	gta	gca	5881
Tyr	Leu	Val	Gly	Ser	Gln	Leu	Pro	Cys	Glu	Pro	Glu	Leu	Asp	Val	Ala	
1345					1350					1355					1360	
gtg	ctc	act	tcc	atg	ctc	acc	gac	ccc	tcc	cac	att	acg	gcg	gag	acg	5929
Val	Leu	Thr	Ser	Met	Leu	Thr	Asp	Pro	Ser	His	Ile	Thr	Ala	Glu	Thr	
				1365					1370					1375		
gct	aag	cgt	agg	ctg	gcc	agg	gga	tct	ccc	ccc	tcc	ttg	gcc	agc	tca	5977
Ala	Lys	Arg	Arg	Leu	Ala	Arg	Gly	Ser	Pro	Pro	Ser	Leu	Ala	Ser	Ser	
			1380					1385					1390			
tca	gct	agc	cag	ctg	tct	gcg	cct	tcc	ttg	aag	gca	aca	tgc	act	acc	6025
Ser	Ala	Ser	Gln	Leu	Ser	Ala	Pro	Ser	Leu	Lys	Ala	Thr	Cys	Thr	Thr	
		1395					1400					1405				
cgt	cat	gac	tcc	ccg	gac	gct	gac	ctc	atc	gag	gcc	aac	ctc	ctg	tgg	6073
Arg	His	Asp	Ser	Pro	Asp	Ala	Asp	Leu	Ile	Glu	Ala	Asn	Leu	Leu	Trp	
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Ile Leu Leu Thr Cys Ala Ile His Pro Glu Leu Ile Phe Thr Ile Thr			
65	70	75	80

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34		

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Leu	Tyr	Leu	Val	Thr 325	Arg	His	Ala	Asp	Val 330	Ile	Pro	Val	Arg	Arg 335	Arg	
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Gly	Asp	Ser	Arg 340	Gly	Ser	Leu	Leu	Ser 345	Pro	Arg	Pro	Val	Ser 350	Tyr	Leu		
aag Lys	ggc Gly	tct Ser 355	tcg Ser	ggc Gly	ggg Gly	cca Pro	ctg Leu 360	ctc Leu	tgc Cys	ccc Pro	tcg Ser	ggg Gly 365	cac His	gct Ala	gtg Val	2905	
ggc Gly	atc Ile 370	ttt Phe	cgg Arg	gct Ala	gcc Ala	gtg Val 375	tgc Cys	acc Thr	cgg Arg	ggg Gly	gtt Val 380	gcg Ala	aag Lys	gcg Ala	gtg Val	2953	
gac Asp 385	ttt Phe	gta Val	ccc Pro	gtc Val	gag Glu 390	tct Ser	atg Met	gga Gly	acc Thr	act Thr 395	atg Met	cgg Arg	tcc Ser	ccg Pro	gtc Val 400	3001	
ttc Phe	acg Thr	gac Asp	aac Asn 405	tcg Ser	tcc Ser	cct Pro	ccg Pro	gcc Ala	gta Val 410	ccg Pro	cag Gln	aca Thr	ttc Phe	cag Gln 415	gtg Val	3049	
gcc Ala	cat His	cta Leu	cac His 420	gcc Ala	cct Pro	act Thr	ggg Gly	agc Ser 425	ggc Gly	aag Lys	agc Ser	act Thr	aag Lys 430	gtg Val	ccg Pro	3097	
gct Ala	gcg Ala	tat Tyr 435	gca Ala	gcc Ala	caa Gln	ggg Gly	tat Tyr 440	aag Lys	gtg Val	ctt Leu	gtc Val	ctg Leu 445	aac Asn	ccg Pro	tcc Ser	3145	
gtc Val	gcc Ala 450	gcc Ala	acc Thr	cta Leu	ggg Gly	ttc Phe 455	ggg Gly	gcg Ala	tat Tyr	atg Met	tct Ser 460	aag Lys	gca Ala	cat His	ggg Gly	3193	
atc Ile 465	gac Asp	cct Pro	aac Asn	atc Ile	aga Arg 470	acc Thr	ggg Gly	gta Val	agg Arg	acc Thr 475	atc Ile	acc Thr	acg Thr	ggg Gly	gcc Ala 480	3241	
ccc Pro	atc Ile	acg Thr	tac Tyr	tcc Ser 485	acc Thr	tat Tyr	ggc Gly	aag Lys	ttt Phe 490	ctt Leu	gcc Ala	gac Asp	ggg Gly	ggg Gly 495	tgc Cys	3289	
tct Ser	ggg Gly	ggc Gly	gcc Ala 500	tat Tyr	gac Asp	atc Ile	ata Ile 505	ata Ile	tgt Cys	gat Asp	gag Glu	tgc Cys	cac His 510	tca Ser	act Thr	3337	
gac Asp	tcg Ser	acc Thr 515	act Thr	atc Ile	ctg Leu	ggc Gly	atc Ile 520	ggc Gly	aca Thr	gtc Val	ctg Leu	gac Asp 525	caa Gln	gcg Ala	gag Glu	3385	
acg Thr	gct Ala 530	gga Gly	gcg Ala	cga Arg	ctc Leu	gtc Val 535	gtg Val	ctc Leu	gcc Ala	acc Thr	gct Ala 540	acg Thr	cct Pro	ccg Pro	gga Gly	3433	
tcg Ser 545	gtc Val	acc Thr	gtg Val	cca Pro	cat His 550	cca Pro	aac Asn	atc Ile	gag Glu	gag Glu 555	gtg Val	gct Ala	ctg Leu	tcc Ser	agc Ser 560	3481	
act Thr	gga Gly	gaa Glu	atc Ile	ccc Pro 565	ttt Phe	tat Tyr	ggc Gly	aaa Lys	gcc Ala 570	atc Ile	ccc Pro	atc Ile	gag Glu	acc Thr 575	atc Ile	3529	
aag Lys	ggg Gly	ggg Gly	agg Arg 580	cac His	ctc Leu	att Ile	ttc Phe	tgc Cys 585	cat His	tcc Ser	aag Lys	aag Lys	aaa Lys 590	tgt Cys	gat Asp	3577	
gag	ctc	gcc	gcg	aag	ctg	tcc	ggc	ctc	gga	ctc 36	aat	gct	gta	gca	tat	3625	

Glu	Leu	Ala 595	Ala	Lys	Leu	Ser	Gly 600	Leu	Gly	Leu	Asn	Ala 605	Val	Ala	Tyr	
tac Tyr	cgg Arg 610	ggc Gly	ctt Leu	gat Asp	gta Val	tcc Ser 615	gtc Val	ata Ile	cca Pro	act Thr	agc Ser 620	gga Gly	gac Asp	gtc Val	att Ile	3673
gtc Val 625	gta Val	gca Ala	acg Thr	gac Asp	gct Ala 630	cta Leu	atg Met	acg Thr	ggc Gly	ttt Phe 635	acc Thr	ggc Gly	gat Asp	ttc Phe	gac Asp 640	3721
tca Ser	gtg Val	atc Ile	gac Asp	tgc Cys 645	aat Asn	aca Thr	tgt Cys	gtc Val	acc Thr 650	cag Gln	aca Thr	gtc Val	gac Asp	ttc Phe 655	agc Ser	3769
ctg Leu	gac Asp	ccg Pro	acc Thr 660	ttc Phe	acc Thr	att Ile	gag Glu	acg Thr 665	acg Thr	acc Thr	gtg Val	cca Pro	caa Gln 670	gac Asp	gcg Ala	3817
gtg Val	tca Ser	cgc Arg 675	tcg Ser	cag Gln	cgg Arg	cga Arg	ggc Gly 680	agg Arg	act Thr	ggt Gly	agg Arg	ggc Gly 685	agg Arg	atg Met	ggc Gly	3865
att Ile	tac Tyr 690	agg Arg	ttt Phe	gtg Val	act Thr	cca Pro 695	gga Gly	gaa Glu	cgg Arg	ccc Pro	tcg Ser 700	ggc Gly	atg Met	ttc Phe	gat Asp	3913
tcc Ser 705	tcg Ser	gtt Val	ctg Leu	tgc Cys	gag Glu 710	tgc Cys	tat Tyr	gac Asp	gcg Ala	ggc Gly 715	tgt Cys	gct Ala	tgg Trp	tac Tyr	gag Glu 720	3961
ctc Leu	acg Thr	ccc Pro	gcc Ala	gag Glu 725	acc Thr	tca Ser	gtt Val	agg Arg	ttg Leu 730	cgg Arg	gct Ala	tac Tyr	cta Leu	aac Asn 735	aca Thr	4009
cca Pro	ggg Gly	ttg Leu	ccc Pro 740	gtc Val	tgc Cys	cag Gln	gac Asp	cat His 745	ctg Leu	gag Glu	ttc Phe	tgg Trp	gag Glu 750	agc Ser	gtc Val	4057
ttt Phe	aca Thr	ggc Gly 755	ctc Leu	acc Thr	cac His	ata Ile	gac Asp 760	gcc Ala	cat His	ttc Phe	ttg Leu	tcc Ser 765	cag Gln	act Thr	aag Lys	4105
cag Gln	gca Ala 770	gga Gly	gac Asp	aac Asn	ttc Phe	ccc Pro 775	tac Tyr	ctg Leu	gta Val	gca Ala	tac Tyr 780	cag Gln	gct Ala	acg Thr	gtg Val	4153
tgc Cys 785	gcc Ala	agg Arg	gct Ala	cag Gln	gct Ala 790	cca Pro	cct Pro	cca Pro	tcg Ser	tgg Trp 795	gac Asp	caa Gln	atg Met	tgg Trp	aag Lys 800	4201
tgt Cys	ctc Leu	ata Ile	cgg Arg	cta Leu 805	aag Lys	cct Pro	acg Thr	ctg Leu	cac His 810	ggg Gly	cca Pro	acg Thr	ccc Pro	ctg Leu 815	ctg Leu	4249
tat Tyr	agg Arg	ctg Leu	gga Gly 820	gcc Ala	gtt Val	caa Gln	aac Asn	gag Glu 825	gtt Val	act Thr	acc Thr	aca Thr	cac His 830	ccc Pro	ata Ile	4297
acc Thr	aaa Lys	tac Tyr 835	atc Ile	atg Met	gca Ala	tgc Cys	atg Met 840	tcg Ser	gct Ala	gac Asp	ctg Leu	gag Glu 845	gtc Val	gtc Val	acg Thr	4345
agc	acc	tgg	gtg	ctg	gta	ggc	gga	gtc	cta	gca 37	gct	ctg	gcc	gcg	tat	4393

Ser	Thr	Trp	Val	Leu	Val	Gly	Gly	Val	Leu	Ala	Ala	Leu	Ala	Ala	Tyr	
850						855					860					
tgc	ctg	aca	aca	ggc	agc	gtg	gtc	att	gtg	ggc	agg	atc	atc	ttg	tcc	4441
Cys	Leu	Thr	Thr	Gly	Ser	Val	Val	Ile	Val	Gly	Arg	Ile	Ile	Leu	Ser	
865					870					875					880	
gga	aag	ccg	gcc	atc	att	ccc	gac	agg	gaa	gtc	ctt	tac	cgg	gag	ttc	4489
Gly	Lys	Pro	Ala	Ile	Ile	Pro	Asp	Arg	Glu	Val	Leu	Tyr	Arg	Glu	Phe	
				885					890					895		
gat	gag	atg	gaa	gag	tgc	gcc	tca	cac	ctc	cct	tac	atc	gaa	cag	gga	4537
Asp	Glu	Met	Glu	Glu	Cys	Ala	Ser	His	Leu	Pro	Tyr	Ile	Glu	Gln	Gly	
			900					905					910			
atg	cag	ctc	gcc	gaa	caa	ttc	aaa	cag	aag	gca	atc	ggg	ttg	ctg	caa	4585
Met	Gln	Leu	Ala	Glu	Gln	Phe	Lys	Gln	Lys	Ala	Ile	Gly	Leu	Leu	Gln	
		915					920					925				
aca	gcc	acc	aag	caa	gcg	gag	gct	gct	gct	ccc	gtg	gtg	gaa	tcc	aag	4633
Thr	Ala	Thr	Lys	Gln	Ala	Glu	Ala	Ala	Ala	Pro	Val	Val	Glu	Ser	Lys	
	930					935					940					
tgg	cgg	acc	ctc	gaa	gcc	ttc	tgg	gcg	aag	cat	atg	tgg	aat	ttc	atc	4681
Trp	Arg	Thr	Leu	Glu	Ala	Phe	Trp	Ala	Lys	His	Met	Trp	Asn	Phe	Ile	
945					950					955					960	
agc	ggg	ata	caa	tat	tta	gca	ggc	ttg	tcc	act	ctg	cct	ggc	aac	ccc	4729
Ser	Gly	Ile	Gln	Tyr	Leu	Ala	Gly	Leu	Ser	Thr	Leu	Pro	Gly	Asn	Pro	
				965					970					975		
gcg	ata	gca	tca	ctg	atg	gca	ttc	aca	gcc	tct	atc	acc	agc	ccg	ctc	4777
Ala	Ile	Ala	Ser	Leu	Met	Ala	Phe	Thr	Ala	Ser	Ile	Thr	Ser	Pro	Leu	
			980					985					990			
acc	acc	caa	cat	acc	ctc	ctg	ttt	aac	atc	ctg	ggg	gga	tgg	gtg	gcc	4825
Thr	Thr	Gln	His	Thr	Leu	Leu	Phe	Asn	Ile	Leu	Gly	Gly	Trp	Val	Ala	
		995					1000					1005				
gcc	caa	ctt	gct	cct	ccc	agc	gct	gct	tct	gct	ttc	gta	ggc	gcc	ggc	4873
Ala	Gln	Leu	Ala	Pro	Pro	Ser	Ala	Ala	Ser	Ala	Phe	Val	Gly	Ala	Gly	
	1010					1015					1020					
atc	gct	gga	gcg	gct	gtt	ggc	agc	ata	ggc	ctt	ggg	aag	gtg	ctt	gtg	4921
Ile	Ala	Gly	Ala	Ala	Val	Gly	Ser	Ile	Gly	Leu	Gly	Lys	Val	Leu	Val	
1025					1030					1035					1040	
gat	att	ttg	gca	ggt	tat	gga	gca	ggg	gtg	gca	ggc	gcg	ctc	gtg	gcc	4969
Asp	Ile	Leu	Ala	Gly	Tyr	Gly	Ala	Gly	Val	Ala	Gly	Ala	Leu	Val	Ala	
				1045					1050					1055		
ttt	aag	gtc	atg	agc	ggc	gag	atg	ccc	tcc	acc	gag	gac	ctg	gtt	aac	5017
Phe	Lys	Val	Met	Ser	Gly	Glu	Met	Pro	Ser	Thr	Glu	Asp	Leu	Val	Asn	
			1060					1065					1070			
cta	ctc	cct	gct	atc	ctc	tcc	cct	ggc	gcc	cta	gtc	gtc	ggg	gtc	gtg	5065
Leu	Leu	Pro	Ala	Ile	Leu	Ser	Pro	Gly	Ala	Leu	Val	Val	Gly	Val	Val	
		1075					1080					1085				
tgc	gca	gcg	ata	ctg	cgt	cgg	cac	gtg	ggc	cca	ggg	gag	ggg	gct	gtg	5113
Cys	Ala	Ala	Ile	Leu	Arg	Arg	His	Val	Gly	Pro	Gly	Glu	Gly	Ala	Val	
	1090					1095					1100					
cag	tgg	atg	aac	cgg	ctg	ata	gcg	ttc	gct	tcg	cgg	ggt	aac	cac	gtc	5161
										38						

Gln	Trp	Met	Asn	Arg	Leu	Ile	Ala	Phe	Ala	Ser	Arg	Gly	Asn	His	Val		
1105					1110					1115					1120		
tcc	ccc	acg	cac	tat	gtg	cct	gag	agc	gac	gct	gca	gca	cgt	gtc	act	5209	
Ser	Pro	Thr	His	Tyr	Val	Pro	Glu	Ser	Asp	Ala	Ala	Ala	Arg	Val	Thr		
				1125					1130					1135			
cag	atc	ctc	tct	agt	ctt	acc	atc	act	cag	ctg	ctg	aag	agg	ctt	cac	5257	
Gln	Ile	Leu	Ser	Ser	Leu	Thr	Ile	Thr	Gln	Leu	Leu	Lys	Arg	Leu	His		
			1140					1145					1150				
cag	tgg	atc	aac	gag	gac	tgc	tcc	acg	cca	tgc	tcc	ggc	tcg	tgg	cta	5305	
Gln	Trp	Ile	Asn	Glu	Asp	Cys	Ser	Thr	Pro	Cys	Ser	Gly	Ser	Trp	Leu		
		1155					1160					1165					
aga	gat	gtt	tgg	gat	tgg	gta	tgc	acg	gtg	ttg	act	gat	ttc	aag	acc	5353	
Arg	Asp	Val	Trp	Asp	Trp	Val	Cys	Thr	Val	Leu	Thr	Asp	Phe	Lys	Thr		
	1170					1175					1180						
tgg	ctc	cag	tcc	aag	ctc	ctg	ccg	cga	ttg	ccg	gga	gtc	ccc	ttc	ttc	5401	
Trp	Leu	Gln	Ser	Lys	Leu	Leu	Pro	Arg	Leu	Pro	Gly	Val	Pro	Phe	Phe		
1185					1190					1195					1200		
tca	tgt	caa	cgt	ggg	tac	aag	gga	gtc	tgg	cgg	ggc	gac	ggc	atc	atg	5449	
Ser	Cys	Gln	Arg	Gly	Tyr	Lys	Gly	Val	Trp	Arg	Gly	Asp	Gly	Ile	Met		
				1205					1210					1215			
caa	acc	acc	tgc	cca	tgt	gga	gca	cag	atc	acc	gga	cat	gtg	aaa	aac	5497	
Gln	Thr	Thr	Cys	Pro	Cys	Gly	Ala	Gln	Ile	Thr	Gly	His	Val	Lys	Asn		
			1220					1225					1230				
tgt	tcc	atg	agg	atc	gtg	ggg	cct	agg	acc	tgt	agt	aac	acg	tgg	cat	5545	
Cys	Ser	Met	Arg	Ile	Val	Gly	Pro	Arg	Thr	Cys	Ser	Asn	Thr	Trp	His		
		1235					1240					1245					
gga	aca	ttc	ccc	att	aac	gcg	tac	acc	acg	ggc	ccc	tgc	acg	ccc	tcc	5593	
Gly	Thr	Phe	Pro	Ile	Asn	Ala	Tyr	Thr	Thr	Gly	Pro	Cys	Thr	Pro	Ser		
	1250					1255					1260						
ccg	gcg	cca	aat	tat	tct	agg	gcg	ctg	tgg	cgg	gtg	gct	gct	gag	gag	5641	
Pro	Ala	Pro	Asn	Tyr	Ser	Arg	Ala	Leu	Trp	Arg	Val	Ala	Ala	Glu	Glu		
1265					1270				1275					1280			
tac	gtg	gag	gtt	acg	cgg	gtg	ggg	gat	ttc	cac	tac	gtg	acg	ggc	atg	5689	
Tyr	Val	Glu	Val	Thr	Arg	Val	Gly	Asp	Phe	His	Tyr	Val	Thr	Gly	Met		
				1285					1290					1295			
acc	act	gac	aac	gta	aag	tgc	ccg	tgt	cag	gtt	ccg	gcc	ccc	gaa	ttc	5737	
Thr	Thr	Asp	Asn	Val	Lys	Cys	Pro	Cys	Gln	Val	Pro	Ala	Pro	Glu	Phe		
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ttc	aca	gaa	gtg	gat	ggg	gtg	cgg	ttg	cac	agg	tac	gct	cca	gcg	tgc	5785	
Phe	Thr	Glu	Val	Asp	Gly	Val	Arg	Leu	His	Arg	Tyr	Ala	Pro	Ala	Cys		
		1315					1320					1325					
aaa	ccc	ctc	cta	cgg	gag	gag	gtc	aca	ttc	ctg	gtc	ggg	ctc	aat	caa	5833	
Lys	Pro	Leu	Leu	Arg	Glu	Glu	Val	Thr	Phe	Leu	Val	Gly	Leu	Asn	Gln		
	1330				1335						1340						
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Tyr	Leu	Val	Gly	Ser	Gln	Leu	Pro	Cys	Glu	Pro	Glu	Pro	Asp	Val	Ala		
1345					1350				1355					1360			
gtg	ctc	act	tcc	atg	ctc	acc	gac	ccc	tcc	cac	att	acg	gcg	gag	acg	5929	
										39							

Val	Leu	Thr	Ser	Met 1365	Leu	Thr	Asp	Pro	Ser 1370	His	Ile	Thr	Ala	Glu 1375	Thr		
gct Ala	aag Lys	cgt Arg	agg Arg 1380	ctg Leu	gcc Ala	agg Arg	gga Gly 1385	tct Ser	ccc Pro	ccc Pro	tcc Ser	ttg Leu	gcc Ala 1390	agc Ser	tca Ser	5977	
tca Ser	gct Ala	agc Ser 1395	cag Gln	ctg Leu	tct Ser	gcg Ala	ccc Pro 1400	tcc Ser	ttg Leu	aag Lys	gca Ala	aca Thr 1405	tgc Cys	act Thr	acc Thr	6025	
cgt Arg	cat His 1410	gac Asp	tcc Ser	ccg Pro	gac Asp	gct Ala 1415	gac Asp	ctc Leu	atc Ile	gag Glu	gcc Ala 1420	aac Asn	ctc Leu	ctg Leu	tgg Trp	6073	
cgg Arg 1425	cag Gln	gag Glu	atg Met	ggc Gly 1430	ggg Gly	aac Asn	atc Ile	acc Thr	cgc Arg	gtg Val 1435	gag Glu	tca Ser	gaa Glu	aat Asn	aag Lys 1440	6121	
gta Val	gta Val	att Ile	ttg Leu	gac Asp 1445	tct Ser	ttc Phe	gag Glu	ccg Pro	ctc Leu 1450	caa Gln	gcg Ala	gag Glu	gag Glu	gat Asp 1455	gag Glu	6169	
agg Arg	gaa Glu	gta Val	tcc Ser 1460	gtt Val	ccg Pro	gcg Ala	gag Glu	atc Ile 1465	ctg Leu	cgg Arg	agg Arg	tcc Ser	agg Arg 1470	aaa Lys	ttc Phe	6217	
cct Pro	cga Arg	gcg Ala 1475	atg Met	ccc Pro	ata Ile	tgg Trp	gca Ala 1480	cgc Arg	ccg Pro	gat Asp	tac Tyr	aac Asn 1485	cct Pro	cca Pro	ctg Leu	6265	
tta Leu	gag Glu 1490	tcc Ser	tgg Trp	aag Lys	gac Asp	ccg Pro 1495	gac Asp	tac Tyr	gtc Val	cct Pro	cca Pro 1500	gtg Val	gta Val	cac His	ggg Gly	6313	
tgt Cys 1505	cca Pro	ttg Leu	ccg Pro	cct Pro	gcc Ala 1510	aag Lys	gcc Ala	cct Pro	ccg Pro	ata Ile 1515	cca Pro	cct Pro	cca Pro	cgg Arg	agg Arg 1520	6361	
aag Lys	agg Arg	acg Thr	gtt Val	gtc Val 1525	ctg Leu	tca Ser	gaa Glu	tct Ser	acc Thr 1530	gtg Val	tct Ser	tct Ser	gcc Ala	ttg Leu 1535	gcg Ala	6409	
gag Glu	ctc Leu	gcc Ala	aca Thr 1540	aag Lys	acc Thr	ttc Phe	ggc Gly	agc Ser 1545	tcc Ser	gaa Glu	tcg Ser	tcg Ser	gcc Ala 1550	gtc Val	gac Asp	6457	
agc Ser	ggc Gly	acg Thr 1555	gca Ala	acg Thr	gcc Ala	tct Ser	cct Pro 1560	gac Asp	cag Gln	ccc Pro	tcc Ser	gac Asp 1565	gac Asp	ggc Gly	gac Asp	6505	
gcg Ala 1570	gga Gly	tcc Ser	gac Asp	gtt Val	gag Glu	tcg Ser 1575	tac Tyr	tcc Ser	tcc Ser	atg Met	ccc Pro 1580	ccc Pro	ctt Leu	gag Glu	ggg Gly	6553	
gag Glu 1585	ccg Pro	ggg Gly	gat Asp	ccc Pro	gat Asp 1590	ctc Leu	agc Ser	gac Asp	ggg Gly	tct Ser 1595	tgg Trp	tct Ser	acc Thr	gta Val	agc Ser 1600	6601	
gag Glu	gag Glu	gct Ala	agt Ser	gag Glu 1605	gac Asp	gtc Val	gtc Val	tgc Cys	tgc Cys 1610	tcg Ser	atg Met	tcc Ser	tac Tyr	aca Thr 1615	tgg Trp	6649	
aca	ggc	gcc	ctg	atc	acg	cca	tgc	gct	gcg	gag 40	gaa	acc	aag	ctg	ccc	6697	



Thr	Gly	Ala	Leu	Ile	Thr	Pro	Cys	Ala	Ala	Glu	Glu	Thr	Lys	Leu	Pro	
			1620					1625					1630			
atc	aat	gca	ctg	agc	aac	tct	ttg	ctc	cgt	cac	cac	aac	ttg	gtc	tat	6745
Ile	Asn	Ala	Leu	Ser	Asn	Ser	Leu	Leu	Arg	His	His	Asn	Leu	Val	Tyr	
		1635					1640					1645				
gct	aca	aca	tct	cgc	agc	gca	agc	ctg	cgg	cag	aag	aag	gtc	acc	ttt	6793
Ala	Thr	Thr	Ser	Arg	Ser	Ala	Ser	Leu	Arg	Gln	Lys	Lys	Val	Thr	Phe	
	1650					1655					1660					
gac	aga	ctg	cag	gtc	ctg	gac	gac	cac	tac	cgg	gac	gtg	ctc	aag	gag	6841
Asp	Arg	Leu	Gln	Val	Leu	Asp	Asp	His	Tyr	Arg	Asp	Val	Leu	Lys	Glu	
1665					1670					1675					1680	
atg	aag	gcg	aag	gcg	tcc	aca	gtt	aag	gct	aaa	ctt	cta	tcc	gtg	gag	6889
Met	Lys	Ala	Lys	Ala	Ser	Thr	Val	Lys	Ala	Lys	Leu	Leu	Ser	Val	Glu	
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gaa	gcc	tgt	aag	ctg	acg	ccc	cca	cat	tcg	gcc	aga	tct	aaa	ttt	ggc	6937
Glu	Ala	Cys	Lys	Leu	Thr	Pro	Pro	His	Ser	Ala	Arg	Ser	Lys	Phe	Gly	
			1700					1705					1710			
tat	ggg	gca	aag	gac	gtc	cgg	aac	cta	tcc	agc	aag	gcc	gtt	aac	cac	6985
Tyr	Gly	Ala	Lys	Asp	Val	Arg	Asn	Leu	Ser	Ser	Lys	Ala	Val	Asn	His	
		1715					1720					1725				
atc	cgc	tcc	gtg	tgg	aag	gac	ttg	ctg	gaa	gac	act	gag	aca	cca	att	7033
Ile	Arg	Ser	Val	Trp	Lys	Asp	Leu	Leu	Glu	Asp	Thr	Glu	Thr	Pro	Ile	
	1730					1735					1740					
gac	acc	acc	atc	atg	gca	aaa	aat	gag	gtt	ttc	tgc	gtc	caa	cca	gag	7081
Asp	Thr	Thr	Ile	Met	Ala	Lys	Asn	Glu	Val	Phe	Cys	Val	Gln	Pro	Glu	
1745					1750					1755					1760	
aag	ggg	ggc	cgc	aag	cca	gct	cgc	ctt	atc	gta	ttc	cca	gat	ttg	ggg	7129
Lys	Gly	Gly	Arg	Lys	Pro	Ala	Arg	Leu	Ile	Val	Phe	Pro	Asp	Leu	Gly	
				1765					1770					1775		
gtt	cgt	gtg	tgc	gag	aaa	atg	gcc	ctt	tac	gat	gtg	gtc	tcc	acc	ctc	7177
Val	Arg	Val	Cys	Glu	Lys	Met	Ala	Leu	Tyr	Asp	Val	Val	Ser	Thr	Leu	
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Phe Val Ala Gly Tyr Ser Gly Gly Asp Ile Tyr His Ser Leu Ser Arg			
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atc	ctc	ctc	acg	tgc	gcg	atc	cac	cca	gag	cta	atc	ttt	acc	atc	acc	2041
Ile	Leu	Leu	Thr	Cys	Ala	Ile	His	Pro	Glu	Leu	Ile	Phe	Thr	Ile	Thr	
	65				70					75					80	

aaa	atc	ttg	ctc	gcc	ata	ctc	ggt	cca	ctc	atg	gtg	ctc	cag	gct	ggt	2089
Lys	Ile	Leu	Leu	Ala	Ile	Leu	Gly	Pro	Leu	Met	Val	Leu	Gln	Ala	Gly	
				85				90						95		

ata	acc	aaa	gtg	ccg	tac	ttc	gtg	cgc	gca	cac	ggg	ctc	att	cgt	gca	2137
Ile	Thr	Lys	Val	Pro	Tyr	Phe	Val	Arg	Ala	His	Gly	Leu	Ile	Arg	Ala	
			100					105					110			

tgc	atg	ctg	gtg	cgg	aag	gtt	gct	ggg	ggt	cat	tat	gtc	caa	atg	gct	2185
Cys	Met	Leu	Val	Arg	Lys	Val	Ala	Gly	Gly	His	Tyr	Val	Gln	Met	Ala	
		115					120					125				

ctc	atg	aag	ttg	gcc	gca	ctg	aca	ggt	acg	tac	gtt	tat	gac	cat	ctc	2233
Leu	Met	Lys	Leu	Ala	Ala	Leu	Thr	Gly	Thr	Tyr	Val	Tyr	Asp	His	Leu	
	130					135					140					

acc	cca	ctg	cgg	gac	tgg	gcc	cac	gcg	ggc	cta	cga	gac	ctt	gcg	gtg	2281
Thr	Pro	Leu	Arg	Asp	Trp	Ala	His	Ala	Gly	Leu	Arg	Asp	Leu	Ala	Val	
	145				150					155					160	

gca	gtt	gag	ccc	gtc	gtc	ttc	tct	gat	atg	gag	acc	aag	gtt	atc	acc	2329
Ala	Val	Glu	Pro	Val	Val	Phe	Ser	Asp	Met	Glu	Thr	Lys	Val	Ile	Thr	
				165					170					175		

tgg Trp	ggg Gly	gca Ala	gac Asp 180	acc Thr	gcg Ala	gcg Ala	tgt Cys	ggg Gly 185	gac Asp	atc Ile	atc Ile	ttg Leu	ggc Gly 190	ctg Leu	ccc Pro	2377
gtc Val	tcc Ser	gcc Ala 195	cgc Arg	agg Arg	ggg Gly	agg Arg	gag Glu 200	ata Ile	cat His	ctg Leu	gga Gly	ccg Pro 205	gca Ala	gac Asp	agc Ser	2425
ctt Leu	gaa Glu 210	ggg Gly	cag Gln	ggg Gly	tgg Trp	cga Arg 215	ctc Leu	ctc Leu	gcg Ala	cct Pro	att Ile 220	acg Thr	gcc Ala	tac Tyr	tcc Ser	2473
caa Gln 225	cag Gln	acg Thr	cga Arg	ggc Gly	cta Leu 230	ctt Leu	ggc Gly	tgc Cys	atc Ile	atc Ile 235	acc Thr	agc Ser	ctc Leu	aca Thr	ggc Gly 240	2521
cgg Arg	gac Asp	agg Arg	aac Asn 245	cag Gln 245	gtc Val	gag Glu	ggg Gly	gag Glu 250	gtc Val 250	caa Gln	gtg Val	gtc Val	tcc Ser	acc Thr 255	gca Ala	2569
aca Thr	caa Gln	tct Ser	ttc Phe 260	ctg Leu	gcg Ala	acc Thr	tgc Cys	gtc Val 265	aat Asn	ggc Gly	gtg Val	tgt Cys	tgg Trp 270	act Thr	gtc Val	2617
tat Tyr	cat His	ggg Gly 275	gcc Ala	ggc Gly	tca Ser	aag Lys	acc Thr 280	ctt Leu	gcc Ala	ggc Gly	cca Pro	aag Lys 285	ggc Gly	cca Pro	atc Ile	2665
acc Thr 290	caa Gln	atg Met	tac Tyr	acc Thr	aat Asn	gtg Val 295	gac Asp	cag Gln	gac Asp	ctc Leu	gtc Val 300	ggc Gly	tgg Trp	caa Gln	gcg Ala	2713
ccc Pro 305	ccc Pro	ggg Gly	gcg Ala	cgt Arg	tcc Ser 310	ttg Leu	aca Thr	cca Pro	tgc Cys	acc Thr 315	tgc Cys	ggc Gly	agc Ser	tcg Ser	gac Asp 320	2761
ctt Leu	tac Tyr	ttg Leu	gtc Val	acg Thr 325	aag Lys	cat His	gcc Ala	gat Asp	gtc Val 330	att Ile	ccg Pro	gtg Val	cgc Arg	cgg Arg 335	cgg Arg	2809
ggc Gly	gac Asp	agc Ser	agg Arg 340	ggg Gly	agc Ser	cta Leu	ctc Leu	tcc Ser 345	ccc Pro	cgg Arg	ccc Pro	gtc Val 350	tcc Ser 350	tac Tyr	ttg Leu	2857
aag Lys	ggc Gly	tct Ser 355	tcg Ser	ggc Gly	ggg Gly	cca Pro	ctg Leu 360	ctc Leu	tgc Cys	ccc Pro	tcg Ser	ggg Gly 365	cac His	gct Ala	gtg Val	2905
ggc Gly 370	atc Ile	ttt Phe	cgg Arg	gct Ala	gcc Ala	gtg Val 375	tgc Cys	acc Thr	cga Arg	ggg Gly	gtt Val 380	gcg Ala	aag Lys	gcg Ala	gtg Val	2953
gac Asp 385	ttt Phe	gta Val	ccc Pro	gtc Val	gag Glu 390	tct Ser	atg Met	gaa Glu	acc Thr	act Thr 395	atg Met	cgg Arg	tcc Ser	ccg Pro	gtc Val 400	3001
ttc Phe	acg Thr	gac Asp	aac Asn 405	tcg Ser	tcc Ser	cct Pro	ccg Pro	gcc Ala	gta Val 410	ccg Pro	cag Gln	aca Thr	ttc Phe	cag Gln 415	gtg Val	3049
gcc Ala	cat His	cta Leu	cac His 420	gcc Ala	cct Pro	act Thr	ggg Gly	agc Ser 425	ggc Gly	aag Lys	agc Ser	act Thr	aag Lys 430	gtg Val	ccg Pro	3097

gct Ala	gcg Ala	tat Tyr 435	gca Ala	gcc Ala	caa Gln	ggg Gly	tat Tyr 440	aag Lys	gtg Val	ctt Leu	gtc Val	ctg Leu 445	aac Asn	ccg Pro	tcc Ser	3145
gtc Val	gcc Ala 450	gcc Ala	acc Thr	cta Leu	ggg Gly	ttc Phe 455	ggg Gly	gcg Ala	tat Tyr	atg Met	tct Ser 460	aag Lys	gca Ala	cat His	ggg Gly	3193
atc Ile 465	gac Asp	cct Pro	aac Asn	atc Ile	aga Arg 470	acc Thr	ggg Gly	gta Val	agg Arg	acc Thr 475	atc Ile	acc Thr	acg Thr	ggg Gly	gcc Ala 480	3241
ccc Pro	atc Ile	acg Thr	tac Tyr	tcc Ser 485	acc Thr	tat Tyr	ggc Gly	aag Lys	ttt Phe 490	ctt Leu	gcc Ala	gac Asp	ggg Gly	ggg Gly 495	tgc Cys	3289
tct Ser	ggg Gly	ggc Gly	gcc Ala 500	tat Tyr	gac Asp	atc Ile	ata Ile 505	ata Ile 505	tgt Cys	gat Asp	gag Glu	tgc Cys	cac His 510	tca Ser	act Thr	3337
gac Asp	tcg Ser	acc Thr 515	act Thr	atc Ile	ctg Leu	ggc Gly	atc Ile 520	ggc Gly	aca Thr	gtc Val	ctg Leu	gac Asp 525	caa Gln	gcg Ala	gag Glu	3385
acg Thr	gct Ala 530	gga Gly	gcg Ala	cga Arg	ctc Leu	gtc Val 535	gtg Val	ctc Leu	gcc Ala	acc Thr	gct Ala 540	acg Thr	cct Pro	ccg Pro	gga Gly	3433
tcg Ser 545	gtc Val	acc Thr	gtg Val	cca Pro	cat His 550	cca Pro	aac Asn	atc Ile	gag Glu	gag Glu 555	gtg Val	gct Ala	ctg Leu	tcc Ser	agc Ser 560	3481
act Thr	gga Gly	gaa Glu	atc Ile	ccc Pro 565	ttt Phe	tat Tyr	ggc Gly	aaa Lys	gcc Ala 570	atc Ile	ccc Pro	atc Ile	gag Glu	acc Thr 575	atc Ile	3529
aag Lys	ggg Gly	ggg Gly	agg Arg 580	cac His	ctc Leu	att Ile	ttc Phe	tgc Cys 585	cat His	tcc Ser	aag Lys	aag Lys	aaa Lys 590	tgc Cys	gat Asp	3577
gag Glu	ctc Leu	gcc Ala 595	gcg Ala	aag Lys	ctg Leu	tcc Ser	ggc Gly 600	ctc Leu	gga Gly	ctc Leu	aat Asn	gct Ala 605	gta Val	gca Ala	tat Tyr	3625
tac Tyr	cgg Arg 610	ggc Gly	ctt Leu	gat Asp	gta Val	tcc Ser 615	gtc Val	ata Ile	cca Pro	act Thr	agc Ser 620	gga Gly	gac Asp	gtc Val	att Ile	3673
gtc Val 625	gta Val	gca Ala	acg Thr	gac Asp	gct Ala 630	cta Leu	atg Met	acg Thr	ggc Gly	ttt Phe 635	acc Thr	ggc Gly	gat Asp	ttc Phe	gac Asp 640	3721
tca Ser	gtg Val	atc Ile	gac Asp	tgc Cys 645	aat Asn	aca Thr	tgt Cys	gtc Val	acc Thr 650	cag Gln	aca Thr	gtc Val	gac Asp	ttc Phe 655	agc Ser	3769
ctg Leu	gac Asp	ccg Pro	acc Thr 660	ttc Phe	acc Thr	att Ile	gag Glu	acg Thr 665	acg Thr	acc Thr	gtg Val	cca Pro	caa Gln 670	gac Asp	gcg Ala	3817
gtg Val	tca Ser	cgc Arg 675	tcg Ser	cag Gln	cgg Arg	cga Arg	ggc Gly 680	agg Arg	act Thr	ggg Gly	agg Arg	ggc Gly 685	agg Arg	atg Met	ggc Gly	3865

att Ile	tac Tyr 690	agg Arg	ttt Phe	gtg Val	act Thr	cca Pro 695	gga Gly	gaa Glu	cgg Arg	ccc Pro	tcg Ser 700	ggc Gly	atg Met	ttc Phe	gat Asp	3913
tcc Ser 705	tcg Ser	gtt Val	ctg Leu	tgc Cys 710	gag Glu	tgc Cys	tat Tyr	gac Asp	gcg Ala	ggc Gly 715	tgt Cys	gct Ala	tgg Trp	tac Tyr	gag Glu 720	3961
ctc Leu	acg Thr	ccc Pro	gcc Ala	gag Glu 725	acc Thr	tca Ser	gtt Val	agg Arg	ttg Leu 730	cgg Arg	gct Ala	tac Tyr	cta Leu	aac Asn 735	aca Thr	4009
cca Pro	ggg Gly	ttg Leu	ccc Pro 740	gtc Val	tgc Cys	cag Gln	gac Asp	cat His 745	ctg Leu	gag Glu	ttc Phe	tgg Trp	gag Glu 750	ggc Gly	gtc Val	4057
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cag Gln 770	gca Ala	gga Gly	gac Asp	aac Asn	ttc Phe	ccc Pro 775	tac Tyr	ctg Leu	gta Val	gca Ala	tac Tyr 780	cag Gln	gct Ala	acg Thr	gtg Val	4153
tgc Cys 785	gcc Ala	agg Arg	gct Ala	cag Gln	gct Ala 790	cca Pro	cct Pro	cca Pro	tcg Ser	tgg Trp 795	gac Asp	caa Gln	atg Met	tgg Trp	aag Lys 800	4201
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tat Tyr	agg Arg	ctg Leu	gga Gly 820	gcc Ala	gtt Val	caa Gln	aac Asn	gag Glu 825	gtt Val	act Thr	acc Thr	aca Thr	cac His 830	ccc Pro	ata Ile	4297
acc Thr	aaa Lys	tac Tyr 835	atc Ile	atg Met	gca Ala	tgc Cys	atg Met 840	tcg Ser	gct Ala	gac Asp	ctg Leu	gag Glu 845	gtc Val	gtc Val	acg Thr	4345
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tgc Cys 865	ctg Leu	aca Thr	aca Thr	ggc Gly	agc Ser 870	gtg Val	gtc Val	att Ile	gtg Val	ggc Gly 875	agg Arg	atc Ile	atc Ile	ttg Leu	tcc Ser 880	4441
gga Gly	agg Arg	ccg Pro	gcc Ala	atc Ile 885	att Ile	ccc Pro	gac Asp	agg Arg	gaa Glu 890	gtc Val	ctt Leu	tac Tyr	cgg Arg	gag Glu 895	ttc Phe	4489
gat Asp	gag Glu	atg Met	gaa Glu 900	gag Glu	tgt Cys	gcc Ala	tca Ser	cac His 905	ctc Leu	cct Pro	tac Tyr	atc Ile	gaa Glu 910	cag Gln	gga Gly	4537
atg Met	cag Gln	ctc Leu 915	gcc Ala	gaa Glu	caa Gln	ttc Phe	aaa Lys 920	cag Gln	aag Lys	gca Ala	atc Ile	ggg Gly 925	ttg Leu	ctg Leu	caa Gln	4585
aca Thr	gcc Ala 930	acc Thr	aag Lys	caa Gln	gcg Ala	gag Glu 935	gct Ala	gct Ala	gct Ala	ccc Pro	gtg Val 940	gtg Val	gaa Glu	tcc Ser	aag Lys	4633



tgg Trp 945	cgg Arg	acc Thr	ctc Leu	gaa Glu	gcc Ala 950	ttc Phe	tgg Trp	gcg Ala	aag Lys	cat His 955	atg Met	tgg Trp	aat Asn	ttc Phe	atc Ile 960	4681
agc Ser	ggg Gly	ata Ile	caa Gln	tat Tyr 965	tta Leu	gca Ala	ggc Gly	ttg Leu	tcc Ser 970	act Thr	ctg Leu	cct Pro	ggc Gly	aac Asn 975	ccc Pro	4729
gcg Ala	ata Ile	gca Ala	tca Ser 980	ctg Leu	atg Met	gca Ala	ttc Phe	aca Thr 985	gcc Ala	tct Ser	atc Ile	acc Thr	agc Ser 990	ccg Pro	ctc Leu	4777
acc Thr	acc Thr	caa Gln 995	cat His	acc Thr	ctc Leu	ctg Leu	ttt Phe 1000	aac Asn	atc Ile	ctg Leu	ggg Gly	gga Gly 1005	tgg Trp	gtg Val	gcc Ala	4825
gcc Ala 1010	caa Gln	ctt Leu	gct Ala	cct Pro	ccc Pro	agc Ser 1015	gct Ala	gct Ala	tcc Ser	gct Ala	ttc Phe 1020	gta Val	ggc Gly	gcc Ala	ggc Gly	4873
atc Ile 1025	gct Ala	gga Gly	gcg Ala	gct Ala	gtt Val 1030	ggc Gly	agc Ser	ata Ile	ggc Gly	ctt Leu 1035	ggg Gly	aag Lys	gtg Val	ctt Leu	gtg Val 1040	4921
gat Asp	att Ile	ttg Leu	gca Ala	ggt Gly 1045	tat Tyr	gga Gly	gca Ala	ggg Gly	gtg Val 1050	gca Ala	ggc Gly	gcg Ala	ctc Leu	gtg Val 1055	gcc Ala	4969
ttt Phe	aag Lys	gtc Val	atg Met 1060	agc Ser	ggc Gly	gag Glu	atg Met	ccc Pro 1065	tcc Ser	acc Thr	gag Glu	gac Asp	ctg Leu 1070	gtt Val	aac Asn	5017
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tgc Cys 1090	gca Ala	gcg Ala	ata Ile	ctg Leu	cgt Arg	cgg Arg 1095	cac His	gtg Val	ggc Gly	cca Pro	ggg Gly 1100	gag Glu	ggg Gly	gct Ala	gtg Val	5113
cag Gln 1105	tgg Trp	atg Met	aac Asn	cgg Arg	ctg Leu 1110	ata Ile	gcg Ala	ttc Phe	gct Ala	tcg Ser 1115	cgg Arg	ggt Gly	aac Asn	cac His	gtc Val 1120	5161
tcc Ser	ccc Pro	acg Thr	cac His	tat Tyr 1125	gtg Val	cct Pro	gag Glu	agc Ser	gac Asp 1130	gct Ala	gca Ala	gca Ala	cgt Arg	gtc Val 1135	act Thr	5209
cag Gln	atc Ile	ctc Leu	tct Ser 1140	agt Ser	ctt Leu	acc Thr	atc Ile	act Thr 1145	cag Gln	ctg Leu	ctg Leu	aag Lys	agg Arg 1150	ctt Leu	cac His	5257
cag Gln 1155	tgg Trp	atc Ile	aac Asn	gag Glu	gac Asp	tgc Cys	tcc Ser 1160	acg Thr	cca Pro	tgc Cys	tcc Ser	ggc Gly 1165	tcg Ser	tgg Trp	cta Leu	5305
aga Arg 1170	gat Asp	gtt Val	tgg Trp	gat Asp	tgg Trp	ata Ile 1175	tgc Cys	acg Thr	gtg Val	ttg Leu	act Thr 1180	gat Asp	ttc Phe	aag Lys	gcc Ala	5353
tgg Trp 1185	ctc Leu	cag Gln	tcc Ser	aag Lys	ctc Leu 1190	ctg Leu	ccg Pro	cga Arg	ttg Leu	ccg Pro 1195	gga Gly	gtc Val	ccc Pro	ttc Phe	ttc Phe 1200	5401

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Ser	Cys	Gln	Arg	Gly	Tyr	Lys	Gly	Val	Trp	Arg	Gly	Asp	Gly	Ile	Met	
				1205					1210					1215		
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Gln	Thr	Thr	Cys	Pro	Cys	Gly	Ala	Gln	Ile	Thr	Gly	His	Val	Lys	Asn	
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Cys	Ser	Met	Arg	Ile	Val	Gly	Pro	Arg	Thr	Cys	Ser	Asn	Thr	Trp	His	
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Gly	Thr	Phe	Pro	Ile	Asn	Ala	Tyr	Thr	Thr	Gly	Pro	Cys	Thr	Pro	Ser	
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ccg	gcg	cca	aat	tat	tct	agg	gcg	ctg	tgg	cgg	gtg	gct	gct	gag	gag	5641
Pro	Ala	Pro	Asn	Tyr	Ser	Arg	Ala	Leu	Trp	Arg	Val	Ala	Ala	Glu	Glu	
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Tyr	Val	Glu	Val	Thr	Arg	Val	Gly	Asp	Phe	His	Tyr	Val	Thr	Gly	Met	
				1285					1290					1295		
acc	act	gac	aac	gta	aag	tgc	ccg	tgt	cag	gtt	ccg	gcc	ccc	gaa	ttc	5737
Thr	Thr	Asp	Asn	Val	Lys	Cys	Pro	Cys	Gln	Val	Pro	Ala	Pro	Glu	Phe	
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Phe	Thr	Glu	Val	Asp	Gly	Val	Arg	Leu	His	Arg	Tyr	Ala	Pro	Ala	Cys	
		1315					1320					1325				
aaa	ccc	ctc	cta	cgg	gag	gag	gtc	aca	ttc	ctg	gtc	ggg	ctc	aat	caa	5833
Lys	Pro	Leu	Leu	Arg	Glu	Glu	Val	Thr	Phe	Leu	Val	Gly	Leu	Asn	Gln	
	1330				1335						1340					
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Tyr	Pro	Val	Gly	Ser	Gln	Leu	Pro	Cys	Glu	Pro	Glu	Leu	Asp	Val	Ala	
1345				1350						1355					1360	
gtg	ctc	act	tcc	atg	ctc	acc	gac	ccc	tcc	cac	att	acg	gcg	gag	acg	5929
Val	Leu	Thr	Ser	Met	Leu	Thr	Asp	Pro	Ser	His	Ile	Thr	Ala	Glu	Thr	
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gct	aag	cgt	agg	ctg	gcc	agg	gga	tct	ccc	ccc	tcc	ttg	gcc	agc	tca	5977
Ala	Lys	Arg	Arg	Leu	Ala	Arg	Gly	Ser	Pro	Pro	Ser	Leu	Ala	Ser	Ser	
			1380					1385					1390			
tca	gct	agc	cag	ctg	tct	gcg	cct	tcc	ttg	aag	gca	aca	tgc	act	acc	6025
Ser	Ala	Ser	Gln	Leu	Ser	Ala	Pro	Ser	Leu	Lys	Ala	Thr	Cys	Thr	Thr	
		1395					1400					1405				
cgt	cat	gac	tcc	ccg	gac	gct	gac	ctc	atc	gag	gcc	aac	ctc	ctg	tgg	6073
Arg	His	Asp	Ser	Pro	Asp	Ala	Asp	Leu	Ile	Glu	Ala	Asn	Leu	Leu	Trp	
	1410				1415						1420					
cgg	cag	gag	atg	ggc	ggg	aac	atc	acc	cgc	gtg	gag	tca	gag	aat	aag	6121
Arg	Gln	Glu	Met	Gly	Gly	Asn	Ile	Thr	Arg	Val	Glu	Ser	Glu	Asn	Lys	
1425				1430						1435					1440	
gta	gta	att	ttg	gac	tct	ttc	gag	ccg	ctc	caa	gcg	gag	gag	gat	gag	6169
Val	Val	Ile	Leu	Asp	Ser	Phe	Glu	Pro	Leu	Gln	Ala	Glu	Glu	Asp	Glu	
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agg gaa gta tcc gtt ccg gcg gag atc ctg cgg agg tcc agg aaa ttc	6217
Arg Glu Val Ser Val Pro Ala Glu Ile Leu Arg Arg Ser Arg Lys Phe	
1460 1465 1470	
cct cga gcg atg ccc ata tgg gca cgc ccg gat tac aac cct cca ctg	6265
Pro Arg Ala Met Pro Ile Trp Ala Arg Pro Asp Tyr Asn Pro Pro Leu	
1475 1480 1485	
tta gag tcc tgg aag gac ccg gac tac gtc cct cca gtg gta cac ggg	6313
Leu Glu Ser Trp Lys Asp Pro Asp Tyr Val Pro Pro Val Val His Gly	
1490 1495 1500	
tgt cca ttg ccg cct gcc aag gcc cct ccg ata cca cct cca cgg agg	6361
Cys Pro Leu Pro Pro Ala Lys Ala Pro Pro Ile Pro Pro Pro Arg Arg	
1505 1510 1515 1520	
aag agg acg gtt gtc ctg tca gaa tct acc gtg tct tct gcc ttg gcg	6409
Lys Arg Thr Val Val Leu Ser Glu Ser Thr Val Ser Ser Ala Leu Ala	
1525 1530 1535	
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Glu Leu Ala Thr Lys Thr Phe Gly Ser Ser Glu Ser Ser Ala Val Asp	
1540 1545 1550	
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Ser Gly Thr Ala Thr Ala Ser Pro Asp Gln Pro Ser Asp Asp Gly Asp	
1555 1560 1565	
gcg gga tcc gac gtt gag tcg tac tcc tcc atg ccc ccc ctt gag ggg	6553
Ala Gly Ser Asp Val Glu Ser Tyr Ser Ser Met Pro Pro Leu Glu Gly	
1570 1575 1580	
gag ccg ggg gat ccc gat ctc agc gac ggg tct tgg tct acc gta agc	6601
Glu Pro Gly Asp Pro Asp Leu Ser Asp Gly Ser Trp Ser Thr Val Ser	
1585 1590 1600	
gag gag gct agt gag gac gtc gtc tgc tgc tcg atg tcc tac aca tgg	6649
Glu Glu Ala Ser Glu Asp Val Val Cys Cys Ser Met Ser Tyr Thr Trp	
1605 1610 1615	
aca ggc gcc ctg atc acg cca tgc gct gcg gag gaa acc aag ctg ccc	6697
Thr Gly Ala Leu Ile Thr Pro Cys Ala Ala Glu Glu Thr Lys Leu Pro	
1620 1625 1630	
atc aat gca ctg agc aac tct ttg ctc cgt cac cac aac ttg gtc tat	6745
Ile Asn Ala Leu Ser Asn Ser Leu Leu Arg His His Asn Leu Val Tyr	
1635 1640 1645	
gct aca aca tct cgc agc gca agc ctg cgg cag aag aag gtc acc ttt	6793
Ala Thr Thr Ser Arg Ser Ala Ser Leu Arg Gln Lys Lys Val Thr Phe	
1650 1655 1660	
gac aga ctg cag gtc ctg gac gac cac tac cgg gac gtg ctc aag gag	6841
Asp Arg Leu Gln Val Leu Asp Asp His Tyr Arg Asp Val Leu Lys Glu	
1665 1670 1675 1680	
atg aag gcg aag gcg tcc aca gtt aag gct aaa ctt cta tcc gtg gag	6889
Met Lys Ala Lys Ala Ser Thr Val Lys Ala Lys Leu Leu Ser Val Glu	
1685 1690 1695	
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Glu Ala Cys Lys Leu Thr Pro Pro His Ser Ala Arg Ser Lys Phe Gly	
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Asn Asp Ile Arg Val Glu Glu Ser Ile Tyr Gln Cys Cys Asp Leu Ala	
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Pro Glu Ala Arg Gln Ala Ile Arg Ser Leu Thr Glu Arg Leu Tyr Ile	
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Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys Gly Asn Thr Leu Thr	
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Cys Tyr Leu Lys Ala Ala Ala Cys Arg Ala Ala Lys Leu Gln Asp	
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Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val Val Ile Cys Glu Ser	
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c atg gac cgg gag atg gca gca tcg tgc gga ggc gcg gtt ttc gta ggt						1849
Met Asp Arg Glu Met Ala Ala Ser Cys Gly Gly Ala Val Phe Val Gly						
1	5	10	15			
ctg ata ctc ttg acc ttg tca ccg cac tat aag ctg ttc ctc gct agg						1897
Leu Ile Leu Leu Thr Leu Ser Pro His Tyr Lys Leu Phe Leu Ala Arg						
	20	25	30			
ctc ata tgg tgg tta caa tat ttt atc acc agg gcc gag gca cac ttg						1945
Leu Ile Trp Trp Leu Gln Tyr Phe Ile Thr Arg Ala Glu Ala His Leu						
	35	40	45			
caa gtg tgg atc ccc ccc ctc aac gtt cgg ggg ggc cgc gat gcc gtc						1993
Gln Val Trp Ile Pro Pro Leu Asn Val Arg Gly Gly Arg Asp Ala Val						
	50	55	60			
atc ctc ctc acg tgc gcg atc cac cca gag cta atc ttt acc atc acc						2041
Ile Leu Leu Thr Cys Ala Ile His Pro Glu Leu Ile Phe Thr Ile Thr						
	65	70	75			80
aaa atc ttg ctc gcc ata ctc ggt cca ctc atg gtg ctc cag gct ggt						2089
Lys Ile Leu Leu Ala Ile Leu Gly Pro Leu Met Val Leu Gln Ala Gly						
	85	90	95			
ata acc aaa gtg ccg tac ttc gtg cgc gca cac ggg ctc att cgt gca						2137
Ile Thr Lys Val Pro Tyr Phe Val Arg Ala His Gly Leu Ile Arg Ala						
	100	105	110			
tgc atg ctg gtg cgg aag gtt gct ggg ggt cat tat gtc caa atg gct						2185
Cys Met Leu Val Arg Lys Val Ala Gly Gly His Tyr Val Gln Met Ala						
	115	120	125			
ctc atg aag ttg gcc gca ctg aca ggt acg tac gtt tat gac cat ctc						2233
Leu Met Lys Leu Ala Ala Leu Thr Gly Thr Tyr Val Tyr Asp His Leu						
	130	135	140			
acc cca ctg cgg gac tgg gcc cac gcg ggc cta cga gac ctt gcg gtg						2281
Thr Pro Leu Arg Asp Trp Ala His Ala Gly Leu Arg Asp Leu Ala Val						
	145	150	155			160
gca gtt gag ccc gtc gtc ttc tct gat atg gag acc aag gtt atc acc						2329
Ala Val Glu Pro Val Val Phe Ser Asp Met Glu Thr Lys Val Ile Thr						
	165	170	175			
tgg ggg gca gac acc gcg gcg tgt ggg gac atc atc ttg ggc ctg ccc						2377
Trp Gly Ala Asp Thr Ala Ala Cys Gly Asp Ile Ile Leu Gly Leu Pro						
	180	185	190			
gtc tcc gcc cgc agg ggg agg gag ata cat ctg gga ccg gca gac agc						2425
Val Ser Ala Arg Arg Gly Arg Glu Ile His Leu Gly Pro Ala Asp Ser						
	195	200	205			
ctt gaa ggg cag ggg tgg cga ctc ctc gcg cct att acg gcc tac tcc						2473
Leu Glu Gly Gln Gly Trp Arg Leu Leu Ala Pro Ile Thr Ala Tyr Ser						
	210	215	220			
caa cag acg cga ggc cta ctt ggc tgc atc atc acc agc ctc aca ggc						2521
Gln Gln Thr Arg Gly Leu Leu Gly Cys Ile Ile Thr Ser Leu Thr Gly						
	225	230	235			240
			74			

cgg Arg	gac Asp	agg Arg	aac Asn	cag Gln 245	gtc Val	gag Glu	ggg Gly	gag Glu	gtc Val 250	caa Gln	gtg Val	gtc Val	tcc Ser	acc Thr 255	gca Ala	2569
aca Thr	caa Gln	tct Ser	ttc Phe 260	ctg Leu	gcg Ala	acc Thr	tgc Cys	gtc Val 265	aat Asn	ggc Gly	gtg Val	tgt Cys	tgg Trp 270	act Thr	gtc Val	2617
tat Tyr	cat His	ggt Gly 275	gcc Ala	ggc Gly	tca Ser	aag Lys	acc Thr 280	ctt Leu	gcc Ala	ggc Gly	cca Pro	aag Lys 285	ggc Gly	cca Pro	atc Ile	2665
acc Thr	caa Gln 290	atg Met	tac Tyr	acc Thr	aat Asn	gtg Val 295	gac Asp	cag Gln	gac Asp	ctc Leu	gtc Val 300	ggc Gly	tgg Trp	caa Gln	gcg Ala	2713
ccc Pro 305	ccc Pro	ggg Gly	gcg Ala	cgt Arg	tcc Ser 310	ttg Leu	aca Thr	cca Pro	tgc Cys	acc Thr 315	tgc Cys	ggc Gly	agc Ser	tcg Ser	gac Asp 320	2761
ctt Leu	tac Tyr	ttg Leu	gtc Val	acg Thr 325	aag Lys	cat His	gcc Ala	gat Asp	gtc Val 330	att Ile	ccg Pro	gtg Val	cgc Arg	cgg Arg 335	cgg Arg	2809
ggc Gly	gac Asp	agc Ser	agg Arg 340	ggg Gly	agc Ser	cta Leu	ctc Leu	tcc Ser 345	ccc Pro	cgg Arg	ccc Pro	gtc Val	tcc Ser 350	tac Tyr	ttg Leu	2857
aag Lys	ggc Gly	tct Ser 355	tcg Ser	ggc Gly	ggt Gly	cca Pro	ctg Leu 360	ctc Leu	tgc Cys	ccc Pro	tcg Ser	ggg Gly 365	cac His	gct Ala	gtg Val	2905
ggc Gly	atc Ile 370	ttt Phe	cgg Arg	gct Ala	gcc Ala	gtg Val 375	tgc Cys	acc Thr	cga Arg	ggg Gly	gtt Val 380	gcg Ala	aag Lys	gcg Ala	gtg Val	2953
gac Asp 385	ttt Phe	gta Val	ccc Pro	gtc Val	gag Glu 390	tct Ser	atg Met	gaa Glu	acc Thr	act Thr 395	atg Met	cgg Arg	tcc Ser	ccg Pro	gtc Val 400	3001
ttc Phe	acg Thr	gac Asp	aac Asn	tcg Ser 405	tcc Ser	cct Pro	ccg Pro	gcc Ala	gta Val 410	ccg Pro	cag Gln	aca Thr	ttc Phe	cag Gln 415	gtg Val	3049
gcc Ala	cat His	cta Leu	cac His 420	gcc Ala	cct Pro	act Thr	ggt Gly	agc Ser 425	ggc Gly	aag Lys	agc Ser	act Thr	aag Lys 430	gtg Val	ccg Pro	3097
gct Ala	gcg Ala	tat Tyr 435	gca Ala	gcc Ala	caa Gln	ggg Gly	tat Tyr 440	aag Lys	gtg Val	ctt Leu	gtc Val	ctg Leu 445	aac Asn	ccg Pro	tcc Ser	3145
gtc Val	gcc Ala 450	gcc Ala	acc Thr	cta Leu	ggt Gly	ttc Phe 455	ggg Gly	gcg Ala	tat Tyr	atg Met	tct Ser 460	aag Lys	gca Ala	cat His	ggt Gly	3193
atc Ile 465	gac Asp	cct Pro	aac Asn	atc Ile	aga Arg 470	acc Thr	ggg Gly	gta Val	agg Arg	acc Thr 475	atc Ile	acc Thr	acg Thr	ggt Gly	gcc Ala 480	3241
ccc Pro	atc Ile	acg Thr	tac Tyr	tcc Ser 485	acc Thr	tat Tyr	ggc Gly	aag Lys	ttt Phe 490	ctt Leu	gcc Ala	gac Asp	ggt Gly	ggt Gly 495	tgc Cys	3289

tct Ser	ggg Gly	ggc Gly	gcc Ala 500	tat Tyr	gac Asp	atc Ile	ata Ile 505	ata Ile 505	tgt Cys	gat Asp	gag Glu	tgc Cys	cac His 510	tca Ser	act Thr	3337
gac Asp	tcg Ser	acc Thr 515	act Thr	atc Ile	ctg Leu	ggc Gly	atc Ile 520	ggc Gly	aca Thr	gtc Val	ctg Leu	gac Asp 525	caa Gln	gcg Ala	gag Glu	3385
acg Thr	gct Ala 530	gga Gly	gcg Ala	cga Arg	ctc Leu	gtc Val 535	gtg Val	ctc Leu	gcc Ala	acc Thr	gct Ala 540	acg Thr	cct Pro	ccg Pro	gga Gly	3433
tcg Ser 545	gtc Val	acc Thr	gtg Val	cca Pro	cat His 550	cca Pro	aac Asn	atc Ile	gag Glu	gag Glu 555	gtg Val	gct Ala	ctg Leu	tcc Ser	agc Ser 560	3481
act Thr	gga Gly	gaa Glu	atc Ile	ccc Pro 565	ttt Phe	tat Tyr	ggc Gly	aaa Lys	gcc Ala 570	atc Ile	ccc Pro	atc Ile	gag Glu	acc Thr 575	atc Ile	3529
aag Lys	ggg Gly	ggg Gly	agg Arg 580	cac His	ctc Leu	att Ile	ttc Phe	tgc Cys 585	cat His	tcc Ser	aag Lys	aag Lys	aaa Lys 590	tgc Cys	gat Asp	3577
gag Glu	ctc Leu	gcc Ala 595	gcg Ala	aag Lys	ctg Leu	tcc Ser	ggc Gly 600	ctc Leu	gga Gly	ctc Leu	aat Asn	gct Ala 605	gta Val	gca Ala	tat Tyr	3625
tac Tyr	cgg Arg 610	ggc Gly	ctt Leu	gat Asp	gta Val	tcc Ser 615	gtc Val	ata Ile	cca Pro	act Thr	agc Ser 620	gga Gly	gac Asp	gtc Val	att Ile	3673
gtc Val 625	gta Val	gca Ala	acg Thr	gac Asp	gct Ala 630	cta Leu	atg Met	acg Thr	ggc Gly	ttt Phe 635	acc Thr	ggc Gly	gat Asp	ttc Phe	gac Asp 640	3721
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gtg Val	tca Ser	cgc Arg 675	tcg Ser	cag Gln	cgg Arg	cga Arg	ggc Gly 680	agg Arg	act Thr	ggg Gly	agg Arg	ggc Gly 685	agg Arg	atg Met	ggc Gly	3865
att Ile	tac Tyr 690	agg Arg	ttt Phe	gtg Val	act Thr	cca Pro 695	gga Gly	gaa Glu	cgg Arg	ccc Pro	tcg Ser 700	ggc Gly	atg Met	ttc Phe	gat Asp	3913
tcc Ser 705	tcg Ser	gtt Val	ctg Leu	tgc Cys	gag Glu 710	tgc Cys	tat Tyr	gac Asp	gcg Ala	ggc Gly 715	tgt Cys	gct Ala	tgg Trp	tac Tyr	gag Glu 720	3961
ctc Leu	acg Thr	ccc Pro	gcc Ala 725	gag Glu	acc Thr	tca Ser	gtt Val	agg Arg	ttg Leu 730	cgg Arg	gct Ala	tac Tyr	cta Leu	aac Asn 735	aca Thr	4009
cca Pro	ggg Gly	ttg Leu	ccc Pro 740	gtc Val	tgc Cys	cag Gln	gac Asp	cat His 745	ctg Leu	gag Glu	ttc Phe	tgg Trp	gag Glu 750	ggc Gly	gtc Val	4057

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Phe	Thr	Gly 755	Leu	Thr	His	Ile	Asp 760	Ala	His	Phe	Leu	Ser 765	Gln	Thr	Lys	
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Gln	Ala 770	Gly	Asp	Asn	Phe	Pro 775	Tyr	Leu	Val	Ala	Tyr 780	Gln	Ala	Thr	Val	
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Cys 785	Ala	Arg	Ala	Gln	Ala 790	Pro	Pro	Pro	Ser	Trp 795	Asp	Gln	Met	Trp	Lys 800	
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Cys	Leu	Ile	Arg	Leu 805	Lys	Pro	Thr	Leu	His 810	Gly	Pro	Thr	Pro	Leu 815	Leu	
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Tyr	Arg	Leu	Gly 820	Ala	Val	Gln	Asn	Glu 825	Val	Thr	Thr	Thr	His 830	Pro	Ile	
acc	aaa	tac	atc	atg	gca	tgc	atg	tcg	gct	gac	ctg	gag	gtc	gtc	acg	4345
Thr	Lys	Tyr 835	Ile	Met	Ala	Cys	Met 840	Ser	Ala	Asp	Leu	Glu 845	Val	Val	Thr	
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Ser	Thr 850	Trp	Val	Leu	Val	Gly 855	Gly	Val	Leu	Ala	Ala 860	Leu	Ala	Ala	Tyr	
tgc	ctg	aca	aca	ggc	agc	gtg	gtc	att	gtg	ggc	agg	atc	atc	ttg	tcc	4441
Cys 865	Leu	Thr	Thr	Gly	Ser 870	Val	Val	Ile	Val	Gly 875	Arg	Ile	Ile	Leu	Ser 880	
gga	agg	ccg	gcc	atc	att	ccc	gac	agg	gaa	gtc	ctt	tac	cgg	gag	ttc	4489
Gly	Arg	Pro	Ala	Ile 885	Ile	Pro	Asp	Arg	Glu 890	Val	Leu	Tyr	Arg	Glu 895	Phe	
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Asp	Glu	Met	Glu 900	Glu	Cys	Ala	Ser	His 905	Leu	Pro	Tyr	Ile	Glu 910	Gln	Gly	
atg	cag	ctc	gcc	gaa	caa	ttc	aaa	cag	aag	gca	atc	ggg	ttg	ctg	caa	4585
Met	Gln	Leu 915	Ala	Glu	Gln	Phe	Lys 920	Gln	Lys	Ala	Ile	Gly 925	Leu	Leu	Gln	
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Thr	Ala 930	Thr	Lys	Gln	Ala	Glu 935	Ala	Ala	Ala	Pro	Val 940	Val	Glu	Ser	Lys	
tgg	cgg	acc	ctc	gaa	gcc	ttc	tgg	gcg	aag	cat	atg	tgg	aat	ttc	atc	4681
Trp 945	Arg	Thr	Leu	Glu	Ala 950	Phe	Trp	Ala	Lys	His 955	Met	Trp	Asn	Phe	Ile 960	
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Ser	Gly	Ile	Gln	Tyr 965	Leu	Ala	Gly	Leu	Ser 970	Thr	Leu	Pro	Gly	Asn 975	Pro	
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Ala	Ile	Ala	Ser 980	Leu	Met	Ala	Phe	Thr 985	Ala	Ser	Ile	Thr	Ser 990	Pro	Leu	
acc	acc	caa	cat	acc	ctc	ctg	ttt	aac	atc	ctg	ggg	gga	tgg	gtg	gcc	4825
Thr	Thr	Gln 995	His	Thr	Leu	Leu	Phe 1000	Asn	Ile	Leu	Gly	Gly 1005	Trp	Val	Ala	

gcc Ala	caa Gln	ctt Leu	gct Ala	cct Pro	ccc Pro	agc Ser	gct Ala	gct Ala	tcc Ser	gct Ala	ttc Phe	gta Val	ggc Gly	gcc Ala	ggc Gly	4873
1010																
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1025																
1030																
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1040																
gat Asp	att Ile	ttg Leu	gca Ala	ggt Gly	tat Tyr	gga Gly	gca Ala	ggg Gly	gtg Val	gca Ala	ggc Gly	gcg Ala	ctc Leu	gtg Val	gcc Ala	4969
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1070																
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1080																
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1090																
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1100																
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1105																
1110																
1115																
1120																
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1125																
1130																
1135																
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1155																
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1170																
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1185																
1190																
1195																
1200																
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1205																
1210																
1215																
caa Gln	acc Thr	acc Thr	tgc Cys	cca Pro	tgt Cys	gga Gly	gca Ala	cag Gln	atc Ile	acc Thr	gga Gly	cat His	gtg Val	aaa Lys	aac Asn	5497
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1225																
1230																
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1235																
1240																
1245																
gga Gly	aca Thr	ttc Phe	ccc Pro	att Ile	aac Asn	gcg Ala	tac Tyr	acc Thr	acg Thr	ggc Gly	ccc Pro	tgc Cys	acg Thr	ccc Pro	tcc Ser	5593
1250																
1255																
1260																

ccg gcg cca aat tat tct agg gcg ctg tgg cgg gtg gct gct gag gag Pro Ala Pro Asn Tyr Ser Arg Ala Leu Trp Arg Val Ala Ala Glu Glu 1265 1270 1275 1280	5641
tac gtg gag gtt acg cga gtg ggg gat ttc cac tac gtg acg ggc atg Tyr Val Glu Val Thr Arg Val Gly Asp Phe His Tyr Val Thr Gly Met 1285 1290 1295	5689
acc act gac aac gta aag tgc ccg tgt cag gtt ccg gcc ccc gaa ttc Thr Thr Asp Asn Val Lys Cys Pro Cys Gln Val Pro Ala Pro Glu Phe 1300 1305 1310	5737
ttc aca gaa gtg gat ggg gtg cgg ttg cac agg tac gct cca gcg tgc Phe Thr Glu Val Asp Gly Val Arg Leu His Arg Tyr Ala Pro Ala Cys 1315 1320 1325	5785
aaa ccc ctc cta cgg gag gag gtc aca ttc ctg gtc ggg ctc aat caa Lys Pro Leu Leu Arg Glu Glu Val Thr Phe Leu Val Gly Leu Asn Gln 1330 1335 1340	5833
tac ccg gtt ggg tca cag ctc cca tgc gag ccc gaa ctg gac gta gca Tyr Pro Val Gly Ser Gln Leu Pro Cys Glu Pro Glu Leu Asp Val Ala 1345 1350 1355 1360	5881
gtg ctc act tcc atg ctc acc gac ccc tcc cac att acg gcg gag acg Val Leu Thr Ser Met Leu Thr Asp Pro Ser His Ile Thr Ala Glu Thr 1365 1370 1375	5929
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cgt cat gac tcc ccg gac gct gac ctc atc gag gcc aac ctc ctg tgg Arg His Asp Ser Pro Asp Ala Asp Leu Ile Glu Ala Asn Leu Leu Trp 1410 1415 1420	6073
cgg cag gag atg ggc ggg aac atc acc cgc gtg gag tca gag aat aag Arg Gln Glu Met Gly Gly Asn Ile Thr Arg Val Glu Ser Glu Asn Lys 1425 1430 1435 1440	6121
gta gta att ttg gac tct ttc gag ccg ctc caa gcg gag gag gat gag Val Val Ile Leu Asp Ser Phe Glu Pro Leu Gln Ala Glu Glu Asp Glu 1445 1450 1455	6169
agg gaa gta tcc gtt ccg gcg gag atc ctg cgg agg tcc agg aaa ttc Arg Glu Val Ser Val Pro Ala Glu Ile Leu Arg Arg Ser Arg Lys Phe 1460 1465 1470	6217
cct cga gcg atg ccc ata tgg gca cgc ccg gat tac aac cct cca ctg Pro Arg Ala Met Pro Ile Trp Ala Arg Pro Asp Tyr Asn Pro Pro Leu 1475 1480 1485	6265
tta gag tcc tgg aag gac ccg gac tac gtc cct cca gtg gta cac ggg Leu Glu Ser Trp Lys Asp Pro Asp Tyr Val Pro Pro Val Val His Gly 1490 1495 1500	6313
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aag Lys	agg Arg	acg Thr	gtt Val	gtc Val 1525	ctg Leu	tca Ser	gaa Glu	tct Ser	acc Thr 1530	gtg Val	tct Ser	tct Ser	gcc Ala	ttg Leu 1535	gcg Ala	6409
gag Glu	ctc Leu	gcc Ala	aca Thr 1540	aag Lys	acc Thr	ttc Phe	ggc Gly	agc Ser 1545	tcc Ser	gaa Glu	tcg Ser	tcg Ser	gcc Ala 1550	gtc Val	gac Asp	6457
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gag Glu 1585	ccg Pro	ggg Gly	gat Asp	ccc Pro	gat Asp 1590	ctc Leu	agc Ser	gac Asp	ggg Gly	tct Ser 1595	tgg Trp	tct Ser	acc Thr	gta Val	agc Ser 1600	6601
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Cys	Tyr	Leu	Lys	Ala	Ala	Ala	Ala	Cys	Arg	Ala	Ala	Lys	Leu	Gln	Asp	
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Cys	Thr	Met	Leu	Val	Cys	Gly	Asp	Asp	Leu	Val	Val	Ile	Cys	Glu	Ser	
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Asp	Leu	Glu	Leu	Ile	Thr	Ser	Cys	Ser	Ser	Asn	Val	Ser	Val	Ala	His	
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Asp	Ala	Ser	Gly	Lys	Arg	Val	Tyr	Tyr	Leu	Thr	Arg	Asp	Pro	Thr	Thr	
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Pro	Leu	Ala	Arg	Ala	Ala	Trp	Glu	Thr	Ala	Arg	His	Thr	Pro	Val	Asn	
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Ser	Trp	Leu	Gly	Asn	Ile	Ile	Met	Tyr	Ala	Pro	Thr	Leu	Trp	Ala	Arg	
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Ser Cys Leu Arg Lys Leu Gly Val Pro Pro Leu Arg Val Trp Arg His	
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Lys Leu Thr Pro Ile Pro Ala Ala Ser Gln Leu Asp Leu Ser Ser Trp	
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14